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THE

PHILOSOPHICAL REVIEW.

THE STANDPOINT OF EXPERIENCE.[1]

THERE is perhaps no word more frequently employed in the philosophical literature of the present day than 'experience.' On taking up a new book, one not infrequently finds the author eager to acknowledge the sins of his predecessors and the discredit they have brought on philosophy by following the high *a priori* road, while at the same time announcing his own intention of founding his conclusions on the impregnable rock of concrete experience. Now I neither wish to deny that there are sometimes grounds for such criticism, nor that these resolves have often borne good fruit. At the present day, the proposition that philosophy must derive its results from experience would undoubtedly command almost universal assent. We all claim to be empiricists, in the sense that we seek to base our philosophical arguments and results upon the facts of experience. But what is often overlooked is the fact that this agreement is only verbal, a mere profession with the lips that carries with it no real unanimity of opinion. For experience, far from being a clear and transparent medium that presents to us facts in unambiguous and unmistakable form, is rather something so many-sided and complex, in some relations so shifting and unstable, as to be capable of yielding various and even contradictory readings. Not only is this true as a matter of fact, but from the very nature of the case it must to a large extent remain true. For the standpoints from which we view experience vary indefinitely with the nature of the ends and purposes that lead us to consult it. Any

[1] This paper was read at Iowa City before the Western Philosophical Association, and also before the Philosophical Seminary of Princeton University.

object of experience, a loaf of bread, for example, may be variously defined from the standpoint of experience as an object in space possessing certain physical and chemical properties, as a complex of sensations, or as an object of desire and will.

The ambiguity which arises regarding the standpoint of experience as a whole is, of course, much more serious and more difficult to avoid than that which obtains where only a single term or element of experience is concerned. However strongly we insist that we propose to deal only with 'facts,' the result always shows that we have approached our facts with conceptions and presuppositions which have determined in large measure our selection and reading of the facts. In setting out to give an account of experience, one may assume, for example, that we are dealing merely with mental states, with a stream of psychical processes which are related to objects beyond themselves only in a secondary and external way. One may further go on to assume, employing more or less consciously Hume's dictum, that whatever is distinguishable is separable, and whatever is separable is distinct and individual, that these psychical processes have no internal principle of connection, but simply become associated and fused together in a mechanical way through the fact of their contiguity in time. We see, then, that the so-called empirical philosophy, far from being a plain historical and unequivocal account of experience, is based on very definite assumptions about the general character of experience. In Hume's system, we see these assumptions carried through by a master mind. And the result, as is well known, seemed to Hume himself in the highest degree artificial and unsatisfactory, though he saw no way of reaching a different conclusion.

Kant's significance in the development of philosophical theories arises from the fact that he questioned the assumptions of his predecessors regarding the nature of experience. As against Hume, he insisted that the mind is an active principle of synthesis which unites the various parts of experience, and is the source of the relations that give it significance. The defects of Kant's philosophy, as is now generally admitted, were due to the fact that his questioning of Hume's presuppositions was not suffi-

ciently thorough-going. If we take merely the letter of his writings, we have to acknowledge that experience, as he describes it, is still an affair of mental representations, and also that the elements of which it is composed stand apart from each other and are only operated upon externally by the principle of synthesis. Without considering these defects further at present, I wish here to urge that Kant, like Hume, is giving an account of experience. In spite of his constant reference to the *a priori* conditions of experience, his real problem is to describe the nature of experience. His account differs from that of the so-called 'empirical school' just because he approached his task with conceptions and presuppositions which were different from theirs. It must not be forgotten, however, that Kant's system is at least as empirical, *i. e.*, as closely based upon the facts of experience, as is the philosophy of the English school.

I.

These introductory remarks may serve to illustrate the statement that experience is no unambiguous term to which one can appeal in uncritical and confident fashion. The truth seems to be that the definition and determination of the true standpoint of experience is, in a certain sense, the essential and all-inclusive problem for philosophy. In discussing the question, therefore, what I shall mainly try to do is to offer some general reflections regarding the nature of experience, and to bring together some conclusions with reference to this topic that appear to have been established by historical criticism and the discussions of the present day.

In the first place we may ask: What test of the adequacy of any description of experience can be laid down? What general conditions must be fulfilled by any account which professes to be true and adequate to the facts? It will not be sufficient to say simply that the account must be true to the facts; for, as we have already seen, the nature and correct reading of the facts is the very point at issue. Here as everywhere, I think, we can only apply the general criteria of intelligibility. What our intelligence demands is completeness and consistency, both of fact and relations. In other words, that account will be most satisfactory

which exhibits most fully and consistently at once the distinctions and relationships which obtain among the various parts of our experience. Philosophy has to render experience intelligible, and to this end it must bring to light its manifoldness and unity, its complete differentiations and integrations.

This implies, of course, that experience must be apprehended through intelligence. And the truth of this at once makes obvious the contradiction involved in the conception of a 'pure' or presuppositionless experience. That experience involves a knowing mind is overlooked by those who propose to begin with a 'pure' experience as something that is directly given, and thus unspoiled by any conceptions or introjections of thought. Every attempt to determine the nature of experience in its so-called purity, before it is corrupted and transformed by the influence of thought, must prove futile, just because experience always exists for a mind, and *to be a mind* is to meet the object with conceptions and practical purposes. From the first, we may say, experience is in the clutches of thought, moulded by the mind's conceptions and presuppositions. Since, then, it is impossible to deal with experience without these presuppositions and conceptions, it follows that the only possible procedure is to test and criticise these as we proceed in order to eliminate their contradictions and correct and supplement their inadequacies. The true nature of experience, therefore, can be discovered, if discoverable at all, only at the end of the process of philosophical reflection and criticism. It is, of course, true that philosophy must start from experience, *i. e.*, from what is already known and established regarding experience. But any such standpoint, however elementary and presuppositionless it may seem, is one that has been already touched by thought, and is no simple datum that is passively reflected in consciousness. We must give up once for all the notion of experience as a mere lump or matter, upon which thought works *ab extra*, as upon something foreign and external to itself. There is no experience in itself, and there is no thought in itself standing as a merely subjective principle in independence of its content. Experience at every stage contains within itself, as an integral part,

the moving principle of thought as its dynamic and integrating factor. From this it follows that experience is no static thing, no permanent storehouse where facts exist in changeless form, but that it is essentially a process of transformation and adjustment, a process that aims both at logical determinateness and consistency, and at the realization of practical ends.

The question which I wish more directly to raise at this point is: Where may the philosophical reflection of the present day strike into this process? What, in other words, is the standpoint of experience for the philosophy of our time? The obvious answer would seem to be that we should begin with what we know, with the standpoint that has been gained through the reflection of the philosophers of the past and the labors of our own generation. This is regarded as the essential condition of further progress in the other sciences, and it is difficult to understand why it should not be equally important in philosophy. Nevertheless, in philosophical discussions one still hears frequent reference to the standpoint of the plain man. I do not assert that this is in no case justifiable. But very frequently it is certainly misleading; and, in addition, to appeal to an uncritical and unreflective reading of the facts seems to betray a fatal misunderstanding of the achievements of philosophy, and a lack of confidence in its results which almost renders impossible any further progress. The astronomer and the physicist would hardly feel that the plain man was competent to speak regarding the facts of experience within their sciences. They would very properly object, if such an appeal were proposed, that their standpoint was the outcome of centuries of intellectual toil, and that the verdict of the plain man could consequently have no weight. Now it seems to me that the same thing is true in an even higher degree in philosophy, where the all-important thing is to understand the form in which questions may legitimately be put. Such knowledge comes only from insight into the way in which the conceptions that form the framework of the science have grown up. The standpoint of experience which we must adopt at the present day is that which has been wrought out and defined by the history of philosophy. One must follow the history of phi-

losophy, not merely mastering its external details, but also gaining insight into the evolution of ideas that it exhibits, before one can hope to contribute in any fruitful way to the solution of its problems. The history of philosophy thus furnishes the indispensable propædeutic through which one is raised to the philosophical point of view, the necessary discipline through which one attains the ability to define one's problems and give them intelligible form.

To answer our question regarding the standpoint of experience, then, it is necessary to make an attempt to bring together what has already been established on this point by the teachings of the past. Perhaps everyone would readily admit that much fruitless effort has been expended, and much time wasted, in philosophical discussions, from a failure to understand adequately the significance of the historical movement as exhibited in the great systems of the past. Not only do we often go on thrashing over old straw, but not infrequently we also continue to employ methods and conceptions which have clearly been discredited and superseded in the evolution of philosophical ideas. The result is that our labors are rendered useless. Nor is this all. Through such unmeaning and anachronistic controversies the standing of philosophy is seriously injured in the scientific world. It is of the utmost importance, then, to ask ourselves what may fairly be said to have been established as to the philosophical standpoint of experience through the reflection of the past and the discussions of our own day. In approaching the facts of experience, what conceptions are likely to prove most fruitful for philosophy?

It would doubtless be vain to expect that complete agreement on all points can be reached in answering this question. But an effort to formulate an answer may perhaps lead us to see the exact problems involved, as well as to perceive some underlying basis of agreement. In attempting, on the present occasion, to outline my own view, I shall be obliged to confine my attention to certain general notions that seem to me of fundamental importance. To render the discussion more definite, I shall state my conclusions somewhat dogmatically in a number of negative

propositions, adding, in each case, a short discussion of the point involved. The logical relation of these propositions, will, I hope, appear as we proceed.

II.

1. *Experience is not a stream of subjective processes, existing as mental modifications in a particular thing called mind.*

Such a view is inadequate, whether, with the empiricists, we think of mind as a passive receptacle, or with Kant, as an activity capable of functioning as a principle of synthesis. It is doubtless true, as I shall have occasion to acknowledge more fully hereafter, that for certain purposes it is useful and necessary to look at consciousness from this point of view. But the proposition which I would now urge is that this is not the view of experience itself, and that, above all, it can never serve as a basis for philosophical construction. If we begin with mental processes, our philosophy must end with mental processes. The only way of avoiding the conclusion of Berkeley is by denying the proposition which forms the real sum and substance of his argument: 'We never know anything except our own ideas.' Nor do we get a satisfactory account of experience by simply accepting Kant's new insight that, through the activity of the mind, thought enters as a principle of synthesis into experience, so long as we regard this activity as a merely subjective principle, a principle whose function is exhausted in bringing order and unity into our representations. For although the deeper spirit of Kant's philosophy doubtless leads beyond this conclusion, what he terms experience never really deserves the name, but remains a thing of representations and never attains to real objectivity.

Subsequent philosophy, however, largely through the criticism and development of Kant's doctrine, has led us to see that it is not sufficient to assume merely the activity of consciousness. In order to render experience possible, it is necessary that this functioning shall be of such a character as to connect the mind with objects. In other words, we have been led to see that a more adequate account of experience does not find the subject here and the object there, the mind on one side and the things

which it knows on the other. Experience is not the resultant of a mechanical interplay of two independent things, but the concrete expression of rational life, having subject and object as organic, though distinguishable members of its essential unity. Not only is there no object without a subject, but it is also equally true that there is no subject without an object. There is no independent object outside of thought, and there is no 'thought in itself,' standing apart and in abstraction from the contents of experience and entering into only occasional and external relations to this content. We do not first have a mind and then become conscious of our relations to objects, but *to have a mind* is just to stand in those self-conscious relations to the objective realities. As Hegel has remarked, it is the very nature of thought 'to shut us together with things'; and we may add that it is the very essence of things to exist necessarily in relation to thought. In stating the matter thus, we are, of course, using the term 'thought' in its broad sense, as inclusive of the volitional and emotional aspects of the life of a rational being, as well as of his merely theoretical or cognitive relations.

2. *The relation of subject and object in experience cannot be adequately expressed in terms of cause and effect.*

This proposition follows immediately from what has been already said, as it is obvious that the application of the causal category presupposes the mind as a consciousness-thing, receiving impressions from an extended object, upon which, it may be, it in turn reacts. It is not altogether superfluous, however, to consider by itself this corollary of our general position. For the causal standpoint is so strongly entrenched in the assumptions of common sense, and so firmly rooted in the metaphors of language, that it still seems to retain its influence in the discussion of special doctrines upon the minds of many writers who have perhaps clearly perceived its general inadequacy. There seems, then, to be some justification for stopping to point out that, when we abandon the causal standpoint and admit that subject and object are related in a more essential and intimate way, we have thereby left behind both the interaction view of the relation of body and mind, and the copy or representative theory of

knowledge. However obvious this truth may appear, it is not always regarded in practice. It seems to me that there are many illustrations, in recent philosophical literature, of a tendency to abandon well-established philosophical positions, and to fall back to the plane of common-sense dualism. This, of course, is to operate with conceptions which have been tried and found wanting by historical criticism, and, as a result, seriously to lessen, if not entirely to destroy, the value of one's conclusions.

The relation of consciousness and its object cannot be represented as that of a consciousness-thing, shut up within itself, to other independently existing physical things. I have spoken of the interaction theory as condemned by this assumption. But in so far as parallelism is based on the same presuppositions, in so far, that is, as it simply denies, from the same standpoint, what interaction affirms, it is equally an anachronism at the present day. The truth in parallelism consists in its insight that the relation of body and mind is no external and occasional relation of two separate entities, but is so close and intimate, so essential and organic, that it cannot be adequately described by means of the mechanical notion of action and interaction. Those who uphold this theory, however, are not always conscious of the real bearing of their doctrine, and understand it as a denial from the common-sense standpoint of any real interconnection between the physical and psychical.

The representative or copy theory of knowledge is based essentially on the same presuppositions, and its breakdown forms one of the most instructive chapters in the history of modern philosophy. According to this view, the object in some way gives rise to a copy or image of itself in the mind. But as the mind is a mere 'consciousness-thing,' shut up in itself, the object is never directly presented in consciousness at all. A number of insoluble problems, then, at once result: What test can the mind find within its own states (to which by hypothesis it is strictly limited) to determine whether or not the copy corresponds to the object? How is it possible for such an external object to impress its image on the mind? And, finally, what evidence is there within experience of the existence of any such

external object at all? These and other difficulties with which the history of philosophy has made us familiar have compelled us to revise our presuppositions regarding the function of subject and object in experience, and to adopt a new view of the nature and relations of these terms. The view of experience, then, to which it seems to me historical criticism leads may be further enforced and defined by means of a third proposition:

3. *The mind is not one particular thing, separated from other things, but as a true individual it contains within itself the principle of universality.*

This is shown by the fact that it is able in one indivisible act to differentiate itself from things and to relate them in the unity of its own life. As Aristotle remarked, 'reason is the potentiality of all things,' not a particular kind of existence separated off from other things. To be a mind at all, is just to stand in essential relation to objects which are not thus left standing without it, but which enter as a real and constitutive element into its nature. Its center of gravity, so to speak, falls outside of what is taken to be the limits of its real nature, so long as it is viewed from the standpoint of an external spectator as a mere mode of existence. In other words, when we take our stand within experience, as philosophy must do, the difficulties regarding the relation of subject and object which seem so persistent and insoluble fall away and lose their meaning. The problem of the interpretation of experience no longer requires us to perform the impossible feat of uniting elements which are eternally and absolutely separate; but, from the internal standpoint, it requires only that we shall render more determinate and precise the relation of two inseparable elements within experience itself.

III.

Before passing on from the general propositions which we have here been considering to any attempt to define more exactly this relation, it seems necessary to say a few words regarding the standpoint of the special sciences in its contrast to that view of experience which we have just insisted must form the basis for philosophy. From the external point of view, experience

appears to be made up of a variety of objects of different kinds. These objects are then parcelled out into groups among the different sciences for investigation. In this division, the first and fundamental distinction is between consciousness-things or minds, and extended things or physical objects. The former class of objects is frequently analyzed into distinct elements like sensation and affection, while the latter is divided into organic and inorganic physical things; the limits of division being determined in each case partly by the satisfaction of the logical demand for distinction and interrelation, and partly by practical considerations of convenience in carrying on investigations. There thus arises the attitude of the special sciences toward experience. This, as we have seen, is always the attitude of one looking at experience from without. Experience is consequently always a collection of *objects* (in the literal sense of the word) or things over against the scientific observer, upon which his thought has to operate in an external way. This attitude is, of course, demanded by the purposes that the special sciences have set themselves to carry out, and within its own field has proved abundantly fruitful.

Philosophy, on the other hand, has its own purpose, and its own standpoint with regard to experience. It has to deal with the world in its immediate relations to the knowing and willing subject, *i. e.*, with experience as we actually live it. When we take this internal point of view, the objects are not viewed in isolation from the subject as a foreign content upon which the thought of the latter has to work, but rather as representing certain situations with which the life of the subject is essentially connected. This, as history has shown, is the only starting-point from which it is possible for philosophy to advance. And I may add that it is just the possession of this concrete standpoint that makes philosophy preëminently the science of experience, and differentiates it from the special sciences, which, from the standpoint of an external observer, investigate the various groups of objects of which experience is composed. Indeed, if the latter were the only legitimate way of viewing experience, there would, I think, be no possible answer to the demand, so often urged, that philosophy should give way to the special sciences.

IV.

It is now time to attempt to make more precise our view of the relations between the subjective and objective elements of experience as these exist from the internal point of view of the philosopher. As we have already seen, the process of experience from this point of view includes and embraces thought as its immanent principle of life and movement. The philosopher's business is not, as an internal observer, to investigate the nature of objects and their outer relations, but to interpret from within the experience which is at once both subject and object, a living process of thought and the being of the world. Now, in the first place, it is important to notice that the relation to objects, which is the very essence of the mind, is an eminently practical relation. In thus defining it, however, I am not opposing in any sense the practical to the theoretical, but rather using the term practical to denote that complete and concrete relation of the mind to objectivity which includes the theoretical as one of its elements. The objects are not indifferent to the mind, things that appeal merely to its theoretical interests as subjects of calm and disinterested contemplation, but they rather represent the means for the satisfaction of its complete interests and the realization of the ends of its complete life. The possession of a mind on the part of the individual denotes just this total practical relation to objects. A being with merely theoretical ends, and without feelings and practical desires, if such a thing were conceivable, could not be said to have experience in the human sense at all. Objects are thus bound up with our feelings and practical purposes, as well as related to us through ideas. Indeed, there is a distinct advantage in interpreting even the ideational relation of the mind to objects by means of the teleological category, so long as this category is not regarded in such a narrow and one-sided way as to subordinate the theoretical life to what is merely externally practical.

We may say, then, that the world is not merely my cognitive idea. It is rather that through which I am able to find satisfaction for my desires, and to obtain the realization of my ends. Among these ends the intellectual demand for comprehension

occupies a real and important place. But it exists always in close and organic connection with other ideals of my nature, such as the demand for practical control and for ethical and æsthetical realization. All of these ends, as elements of a concrete totality, constitute the reason or complete mind of a rational being. It consequently follows that all of these sides must contribute something to a complete interpretation of experience. To assign to each of these factors its proper place and determine its significance, to discover the categories that will preserve the truth and lead to the most complete harmony of these various ideals, is the task of philosophical reflection.

It must never be forgotten that this total attitude of the mind toward experience is not simply a complex of functions that exist in isolation from one another. They are rather to be regarded as a system of ends that expresses the organic and essential unity of the experiencing subject in its complete and concrete attitude toward the world. The synthetic unity of apperception, that which gives significance and unity to experience, is something more than a merely theoretical or logical principle. In order really to perform its function, there must also enter into it the practical and emotional factors which constitute our rational human life. Only by regarding these various elements as a system of functions existing in relation to objects do we reach the view of a concrete totality of mind.

There still remain two points which seem to demand further consideration in this connection.

I. In the first place, it may be objected that we do not escape subjectivism by interpreting the world in terms of purpose instead of in terms of sensation and idea. If I construe reality as a set of means for the realization of my purposes, as an instrument for the realization of my will, its real objective character seems to be lost. 'The world is my oyster,' is even less satisfactory as a philosophical principle than, 'Die Welt ist meine Vorstellung.' Now this objection, though possessing force against a certain external view of purpose, does not apply to the view of experience we have been attempting to outline. The objection, in short, rests upon and presupposes the abstract separation of

subject and object, of knowledge and will, against which our whole view is directed. It would be a false view of experience to suppose that the subject confronts reality with fully defined and unyielding purposes as fixed standards by which its nature is to be determined. The truth is rather that the purposes of the subject are only real through their relation to the concrete situation in experience. So far from being fixed standards, according to which facts must be ruthlessly construed, the concrete process of experience is constituted by the organic interplay of those two factors.

On the one hand, we see the purposes of the subject becoming progressively limited, corrected, and defined through the stubborn character of the 'facts' before they can reach fulfillment. We learn by the hard discipline of the real world what we really want and intend, what exact content is essential to the realization of our purposes in a given concrete situation. The mind's purposes — just because they are the purposes of a mind — are never merely subjective purposes or internal meanings. For quite apart from things they would have no meaning. As they at first appear, however, this reference to things is vague and indeterminate. But in the concrete development of experience new facts and situations come to light that give definiteness and content to these purposes. The objects which, as stubborn external facts, seem to annihilate and bring to naught our purposes, in reality correct and supplement them in such a way as to afford the true fulfillment and embodiment that they demand.

On the other hand, it must not be forgotten that the objects are not external realities which exist and operate upon the mind apart from its interests and purposive ideas. It is our reason itself which, as a thinking will or a willing thought, goes on to define and determine more adequately its own meanings and purposes. And it does this by selecting through active attention the objects it wants, those which stand in the required relation to its own ends and ideas. Facts, then, gain their significance in the development of experience only in so far as they become ideas; that is, only in so far as they are selected by our thinking-will as fulfilling and defining its own meanings and purposes. Without being thus chosen,

so to speak, no 'fact in itself,' if such a term has any meaning, has power over our purposes and ideas, either to fulfill them or to overthrow them. The object that leads the mind beyond subjectivity is the object that the attention selects as just that which is demanded by the mind's purposes and ideas. Thus we may say that the evolution of experience is the mind's own process of self-determination. In this process it becomes progressively aware of its own meaning through its commerce with the objects which it has itself selected as the necessary means for the embodiment and fulfillment of its own demands.[1]

II. Proceeding now to our second point, we may ask if it is necessary to subordinate the real to the ideal element in experience as our account has done. Instead of interpreting the object in terms of the subject, we must accept these elements, it may be urged, as simply existing in mutual coördination in experience. Or the question might be raised whether it would not be more truly scientific to construe the mind as a function of the object. These questions are of the utmost importance, and I realize that my treatment of them here must necessarily be very summary and far from complete. It seems necessary to refer to them briefly, however, in order to render reasonably complete the view of experience we have been occupied in outlining.

Once again we must defend the results we have reached by insisting that the standpoint of philosophy is that of internal experience itself. From this point of view, the subject is seen to include the object, the ideal to furnish the system within which the real falls. Both of the objections which call in question this interpretation draw their support, I think, from a consideration of experience from an external standpoint. When we attempt, for example, to understand man and man's life from the point of view of biology, it is natural to take as our starting-point the bodily organism, and to interpret the mental life as a set of functions that ministers to its wants. From this standpoint, it is possible to regard consciousness as a variation which possesses survival value, and its content and constitution as determined by the biological needs that have arisen during the life of the physical organism. Such an account might for biology be useful

[1] *Cf.* Royce, *The World and the Individual*, Chap. VII.

and true. It must not be forgotten, however, that this standpoint is abstract, and consequently that the account cannot be accepted as philosophy, *i. e.*, as a complete and adequate reading of the facts of experience.

Among certain philosophical writers of the present day, however, it is more common to insist on the exact coördination of the subjective and objective factors in experience. The direct view of experience, it is said, shows us subject and object together in fundamental or organic unity. We cannot, then, so long as we are true to experience, subordinate one of these terms to the other. Indeed, when once we give up the ontological view, which regards subject and object as entities, and recognize that these are simply functions within experience, we see that there is no necessity for such a subordination. The account of experience, then, cannot rightly be couched either in terms of idealism or in those of materialism. The relation between the subjective and objective elements is rather to be regarded as that of two coördinate factors that derive their meaning from their functional interplay and interaction.

I must certainly apologize for attempting to criticize, in a paragraph, a theory which has not even been fully stated. But I venture to refer to it here because I think its essential defect has been already indicated in the course of my paper. Perhaps we may get at the root of the matter most quickly, if we examine the concept of function which plays so large a part in the discussions to which I have referred. Outside of mathematics, where the term indicates merely a constant ratio between two quantitative expressions, function denotes an activity of some part or member of an organic unity. Thus we can speak of the function of the blood in the body, or of the legislature in a state. That which functions is always a member of an organism, and the end of the function always includes a reference to the whole of which this member is a part. Now it seems pertinent to ask: What is the whole of which the subjective and objective factors in experience are functions? We do not get a true totality by simply adding together the two sides. If it be said that the concrete experience itself is the true totality, the real organic whole

of which subject and object are functions, I reply that experience is only known in this way when apprehended from within. When looked at from an objective point of view, as when I regard the experience of another individual, it appears as a complex of separate parts entirely without organic unity. In other words, it is only in virtue of self-consciousness that we are able to speak of experience as an organic unity. And self-consciousness shows itself as the concrete unity of subject and object which we have been seeking. It is not a particular fact, alongside of and coördinate with other facts, but a universal principle which interpenetrates all the particulars, and comes to a consciousness of itself just through forming and expressing the nature of all these particulars. Without the object there could be no self-consciousness, just as without self-consciousness there could be no object. Very true. But this does not imply that these two correlated terms are at the same time coördinate. We might say that without the various members of a plant or animal there would be no life, and yet not regard life as another fact to be coördinated with these members. But doubtless I shall be reminded that organic life is nothing over and above the functional relation of the parts — that life is not a thing but a relation. Carrying out this analogy, it may be further urged, we consequently cannot impute to experience any principle of unity over and above the functional interplay of parts that are actually found there. To do so would be to hypostatize a system of relations.

It would be foreign to my purpose to enter into any discussion of the adequacy of this conception of organic life, and it is by no means necessary for our argument. For the analogy between any physical organism and experience breaks down. In experience this unity not only exists as a fact for an outside spectator, but comes to a knowledge of itself in self-consciousness. And self-consciousness cannot properly be regarded as just an additional characteristic of the experience process to which no more special importance attaches than to any other characteristic. Self-consciousness, in other words, is unique and all-important. It transforms the whole process by reducing all the objective relations into terms of its own life. By becoming conscious of the

objective relations, and of its own life in connection with these relations, it thus raises itself above the mere process of experience. Now it is essential to see that it is only in the light of this central principle of self-consciousness that we can regard the various elements in experience as related functionally. Functions, as we have already maintained, imply a central unity which is something more than the mere togetherness of parts. Or, to put the same thing in a different form, the *fact* of functional relationship implies the existence of an inner pervading identity running through the parts. In experience this principle of identity comes to consciousness of itself by distinguishing itself from the objects in which its nature is expressed and embodied. And in this act of discrimination and recognition there is to be found the central principle in the light of which the whole process of experience gains significance and the possibility of interpretation.

It is in this sense that the mental may be said to overlap the physical, the ideal to include the real. And if the existence and position of such an ideal principle be admitted, it would seem to follow directly that to give a philosophical interpretation of experience is to show its relation to the ideals and purposes of a rational self-consciousness.

J. E. CREIGHTON.

A SUMMARY EXPOSITION OF SAINT THOMAS AQUINAS'S PHILOSOPHY OF KNOWLEDGE.[1]

THE aim of the present article is to state briefly, not to discuss, a theory. It does not purpose to justify, but simply to interpret it in a reliable and trustworthy manner, in strict conformity with the tenets of the venerable system which for several centuries was the prevailing philosophical doctrine of the Western World.

Thinkers of to-day begin to realize that there is more to be found in the works of the great authors of the scholastic period than was formerly supposed, and accordingly there may perhaps be aroused in some reflective minds a desire to look into the depths of the thought of a period, in which it has been too commonly supposed that nothing was stored up but rubbish and useless subtleties. The difficulty, however, is to get at the right meaning of those early scholastic philosophers, so as to understand their doctrines as they themselves understood them. Separated as they are from our times by a distance of several centuries, they are enclosed, so to speak, within the walls and barriers of a special dialect framed, used, and available for scholastic purposes only. The conciseness, as well as, at times, the prolixity of their style, altogether devoid of pretension to any literary merit, and the summary, rather algebraical character of their formulas, that aimed at nothing but expressing an idea with the greatest possible precision, often make interpretation a task of great uncertainty for the uninitiated.

To such persons, therefore, as may care for a faithful and reliable exposition, one that does not substitute the private views of the exponent for the genuine conceptions of the author, we offer the present essay as a contribution intended to convey to their minds the authentic doctrine of Aquinas, a doctrine which, on this particular subject, was that of his contemporaries gener-

[1] The author desires to express his thanks to Dr. Clarke Murray, of McGill University, for helpful suggestions made by him in regard to the following article.

ally, concerning what may be considered, and has in fact become, since the days of Kant, the most controverted and most important of speculative problems — that of the philosophy of knowledge.[1] But since St. Thomas's views on human knowledge are essentially connected with his psychological system, it will first of all be necessary to give a short summary of the latter.[2]

I.

If we should attempt to give a definition of the human soul, as St. Thomas himself would have formulated it, we should define it: "The substantial form of a physical organic body endowed with rational life." Anyone who is at all acquainted with the *Περὶ Ψυχῆς* of Aristotle will, at the first glance, have discovered in the first member of the foregoing definition the equivalent of that which the celebrated Peripatetic gave of the soul considered in its generic aspect as the vital principle common to every living being, or as "the first entelechy (fundamental constitutive perfection) of a physical organic body;"[3] that is to say, that first fundamental constitutive perfection that raises the body in which it resides to the dignity of a real living organic body, by generating in it the vital impulse, the vital activity. What Aristotle called 'first entelechy' the scholastics used to render by the synonymous expression 'substantial form,' an expression which we cannot avoid and which we shall therefore explain somewhat more fully.

[1] The author, being a member of the religious order to which St. Thomas himself belonged, and having been for twelve years a student or teacher of his system, may venture to hope that he merits some confidence as an interpreter of the views of one whom he may style his brother and master.

[2] The doctrine of St. Thomas concerning the human soul may best be looked for in his *Summa theologica*, Part I, from question lxxv to question xc inclusive, where he treats the subject *ex professo* and in full, although in his characteristic scholastic manner; also in the *Contra gentes*, Book II, from chapter lvi to chapter xc inclusive, again in the *Quæstiones disputatæ* at the question *De anima* (twenty-one articles), and in his commentaries on Aristotle's three books *De anima*. St. Thomas deals with the subject of the human soul in other passages, but we content ourselves with mentioning those in which the exposition is most complete and systematic; the same remark may apply also to the quotations that we are going to make further on, this article purporting to be a faithful interpretation, not a concordance.

[3] Ἐντελέχεια ἡ πρώτη σώματος φυσικοῦ ὀργανικοῦ (Περὶ Ψυχῆς, Book II, c. 1, line 44, Didot edition).

Spectroscopic analysis shows us that matter is everywhere identical throughout the sidereal world, while chemical analysis reveals to us the fact that all things are made of the same elementary principles, the so-called simple bodies. If we omit for the present the question as to whether the given number of simple bodies that we admit nowadays cannot or will not eventually be reduced to some smaller number, there is one thing, at all events, that we may safely assert, viz., that those simple bodies, whatever their real number may be, are all but various, primitive forms of one and the same nature, matter. For even granting that they are chemically quite unanalyzable through any material agency, there are still some features that all have in common, those that are characteristic of materiality. All, indeed, have more or less extension; all have weight, density, and the other properties that are inseparable from matter, wherever and under whatever form it can be found. We are therefore led by the simple observation of facts to conceive of some generic element common to all, attainable indeed by reason only, but which reveals itself to us under the primary forms of the simple bodies of which it is the common and radical substratum, the simple bodies being merely its primitive and original forms. This substratum was the primary matter, *materia prima*, of the Scholastics.[1]

Furthermore, experience reveals to us that, whenever, either in the organic or inorganic realm, some new combination takes place, the elements thus combined, either compound or simple bodies, seem to disappear — to melt mysteriously together into some new entity into which they are absorbed, the total sum of which has indeed the same weight, but, seemingly at least, properties of a quite different nature from those of the component elements. The qualities of water, for instance, are admittedly altogether different from those of its elements, the gases hydrogen and oxygen. Water, therefore, may be considered as being only virtually contained in both before combination. On the basis of this experimental fact, that matter, as it is found under

[1] Cf. Zigliara, *Summa philos.*, *Cosmologia*, Liber II, cap. ii, art. 2 et 3; Aquinas, *Sum. theol.*, Part I, q. lxvi, 2.

any form whatsoever, either in simple or compound bodies, may always be transformed chemically so as to be brought under some other, which is seemingly, at least, essentially different from the preceding one, the Scholastics laid down as a general principle that any natural being, either organic or inorganic, ought reasonably and upon good experimental grounds to be considered as made of two constitutive substantial elements, the original matter and its own proper form. The first was ever identical under all possible forms; but the forms were always different from one another, either specifically, as the form of a dog is from the form of a tree, or numerically, as those of different trees of the same species.[1]

Let us also remark here in passing that the Scholastics distinguished between the substantial form, which was a constitutive essential part, and the accidental form; the latter being only an accessory and complementary determination supervening in the individual upon his constituted nature. Fluidity, for instance, or, in the case of frozen water, solidity, were only accidental forms of the water that was in itself substantially constituted by matter and the 'watery form.' The human soul also was a substantial form, the first act or entelechy of that physical organism, the human body.[2] It was the soul that generated in it the ensemble of activities, regularly and harmoniously coöperating, which we call life; without the indwelling and immanent agency of the soul, that body would have remained inanimate, lifeless; through it, it became a real 'physical organic body' because a living one.[3] The soul, therefore, was residing in the body, not, as Descartes would have said, somewhat like a horseman sitting

[1] Cf. *Sum. theol.*, Part I, q. 66, a. 1 and 2, and *passim*. The concept of matter and form, as every one knows, was no creation of the Scholastics; they had simply borrowed it from the Greeks. For St. Thomas's interpretation of the Aristotelian doctrine on that point, one may consult his Commentaries on Aristotle's *Physics* (*De physico auditu*), Book I, and on his *Metaphysics*, Book VIII.

[2] Cf. *Sum. theol.*, Part I, q. lxxvi, a. 1; *Contra gentes*, Book II, c. 68. We should like to remind the reader that the following exposition of St. Thomas's psychology is a mere statement of his views. It would be impossible within such a narrow compass as that of the present article to attempt anything like a sufficient justification of them.

[3] *Sum. theol.*, Part I, q. 75, a. 1.

on his steed, or like a pilot in the ship that he guides, but as a constitutive principle forming by its combination with the body a single new being, to wit, the individual man, that was different from both, as water is from hydrogen or oxygen; for the man is neither the soul nor the body but a compound of the two.[1]

This doctrine must appear very materialistic, and hardly reconcilable with the spiritualistic creed which is the necessary 'presuppositum' of Christian belief, if the human soul is to be considered as entering into combination with a purely material nature like the body, and if it is to be regarded as exerting upon it that sort of quasi-chemical, or, one might say, fermentative action that generates in it the vital activity, just as the soul of a brute or the vital principle of a plant.[2]

Still that substantial form of a material body was considered by St. Thomas, at the same time, as immaterial and therefore simple. It was immaterial, because being able, as all will admit, to form some conceptions of immaterial objects, such as the Good, Virtue, God, etc., such conceptions could be the product only of proportionate and similar, that is to say, immaterial, operations; for even if necessarily accompanied, as has been abundantly proven by physiology, with material concomitants in the brain, those operations could not have reached an immaterial object if they had been essentially and exclusively material themselves. Again, the idea of an immaterial operation cannot be understood without the idea of an immaterial faculty that produces it, and which in its turn points necessarily to an immaterial nature, from which alone it can spring.[3]

Being immaterial, the human soul is consequently immortal,

[1] *Sum. theol.*, Part I, q. 76, a. 8. This doctrine concerning the substantial union of the soul and the human body is now a dogma of faith in the Catholic Church since the definition that was formulated by the council of Vienne (France) in 1311. (Cf. *Enchiridion symbolorum* of Denzinger, No. 409, 9th edition, 1901, Würzburg.) It is on this basis of the mutual, natural, and necessary correlation of body and soul that some eminent commentators of the master inferred that the human soul after death, being on account of its separation from the body in an unnatural or violent condition, required a future resurrection of that body, as some sort of natural right. The Church, however, has not adopted that inference.

[2] Cf. *Ibid.*, Part I, q. lxxvi, a. 1, 3, 4.

[3] Cf. *Ibid.*, Part I, q. 25, a. 2.

not by privilege, but by its nature, so that it cannot be otherwise conceived,[1] and therefore it cannot come into existence, except by creation, nor possibly be destroyed, except by annihilation, just like the primary quantitative elements of the simple bodies themselves.[2]

How, then, does Aquinas reconcile the seeming contradiction that exists between the concept of a spiritual soul and that of the same as 'substantial form' of an organic body? The solution of the apparent antinomy is to be found in the grand view in which, following Dionysius Areopagita, his mind embraced the whole world.[3] The divine wisdom that made the universe disposed the scale of beings in such an order of rising and gradual perfection, that every superior form virtually contains in its own perfection all the attributes that can be found in the inferior beings, together with its own superior characteristic properties, so that it may be laid down as a general principle in nature, that "*Summum infimi attingit infimum supremi*," the superior grades of perfection of any given being are to be found again as inferior perfections in some higher species, so that there is no gap in nature, which rather rises steadily through multiple intermedia, from the lowest to the highest organisms.[4] In plants, we find minerality, but associated and subordinated to the functions that are characteristic of the living beings, nutrition, growth, and generation, under the vegetable form; in the animal kingdom, we discover vegetative life, but associated with it that higher degree of activity which is peculiar to sensitive beings and manifests itself principally in locomotive power; in man, we find at the same time minerality combined with vegetative and sensitive life, but subservient to moral and intellectual activity. That is why the ancients used to call man a *microcosmus*, for he was like a résumé of the various perfections scattered through the universe. But since the human being possesses one superior order of faculties, those that fit him for a distinctly spiritual activity, it must

[1] Cf. *Sum. theol.*, q. 95, a. 6, and *Contra gentes*, Book. II, ch. 79.

[2] Cf. *Ibid.*, Part I, q. 90, a. 2.

[3] *Contra gentiles*, Book II, ch. 68.

[4] Let us remark in passing how nearly related to the evolutionary theory is the view that we mention here.

be admitted also that that organic body of which the soul is the substantial act or form, was raised by it to the participation of its own immaterial being, of its own intellectual and moral pursuits. It shared in them, as the subject required to support the exercise of those intellectual and moral operations, and as the instrument through which the soul comes in contact with the external material world. As man partakes of all the attributes of material beings, which are, so to speak, epitomized in him, while at the same time he partakes of the higher functions of intellectual and moral life along with the angels, he appears to us like a horizon [1] in which heaven and earth unite, as the intermediary being through which material life blossoms, as it were, into spiritual and immaterial activity.

Such, in brief, then, is the meaning of our definition of the human soul as "the substantial form (first act or entelechy) of a physical organic body endowed with rational life."

II.

A theory of knowledge based on such psychological foundations must logically follow the same plan in its systematic elaboration, as will become apparent from the remainder of this article. Like the soul from which it emanates, the cognitive power in man will be at the same time material and immaterial, or, to express it more accurately, will, although essentially immaterial, exercise some of its operations with the necessary concurrence of the body; there will be in it something material and something immaterial. The faculties of the soul spring forth from its essence as the boughs from the stem of a tree, distinct from it but as a natural and necessary production of it.[2] The human intellect, therefore, is an efflux of the soul; it is the eye through which it explores the material and even peers into the spiritual world, being, as the Scholastics would have said, 'a spiritual accident of a spiritual substance.' Nevertheless, all knowledge must develop from the data of sensuous perception,[3] and it is only through inferences and indirectly that it can rise to any immaterial notion concern-

[1] Cf. *Contra gentes*, Part II, 68.

[2] Cf. *Sum. theol.*, Part I, q. 77, a. 1, 6.

[3] Cf. *Ibid.*, Part I, q. 84, a. 6.

ing the immaterial world. A careful analysis of the process of intellection will help us to realize that fact, which the Scholastics expressed in the trite axiom, *non est intellectus sine phantasmate* — there can be no intellection without some picture in the imagination — not only as the starting point, but also as the necessary and indispensable subject of any operations of the intellect, even the most abstract and seemingly immaterial one.[1] Such a conception obviously must imply that there are for St. Thomas no innate ideas, since all knowledge must begin from sensuous perception. And, indeed, if by innate ideas we understand such concepts as we might have inherited ready-made, there are not for him, in the proper sense of the term, any innate ideas.[2] This is for him a simple statement of fact: it does not require any demonstration. Did not Aristotle, *the* philosopher — he whom we might term the prophet of the Scholastics — tell us that the individual human mind at the outset is like a *tabula rasa* on which nothing has as yet been written?[3] Such is undoubtedly the condition of the mental faculty of a child before the awakening of his intellectual activity. As a fact, therefore, man is not born with ready-made ideas, and in that sense there are not any 'innate ideas' so-called.

But if no ideas are innate in the human mind, there is nevertheless in it an inborn tendency to frame some very definite ones which universally appear in it as soon as the first awakening of the intellectual faculty takes place; for that awakening itself implies and involves the acknowledgment of the *first principles*[4] which form themselves spontaneously in the intellect as soon as it comes in contact with 'intelligible' objects; exactly as the first contact of food causes the gastric juice to spring from the walls of the stomach.

The simile is a very material one, but it may be pardonable to employ it in default of a better one; and it may help us to realize the meaning of the Scholastics. The difference, however, is that

[1] Cf. *Sum. theol.*, Part I, q. 84, a. 7.

[2] Cf. *Ibid.*, q. 84, a. 3.

[3] Ὥσπερ ἐν γραμματείῳ ὧ μηθὲν ὑπάρχει ἐντελεχείᾳ γεγραμμένον (Περὶ Ψυχῆς, Bk. III, c. 4, no. 11, Didot edition).

[4] *Sum. theol.*, *secunda secundæ*, q. xlvii, a. 6.

the gastric juice is produced by the stomach alone, being secreted by its walls at the presence of a digestible object, but the latter contributes nothing to the substantial constitution of the said gastric juice: whereas the first principles are generated in the intellect by the intelligible object itself, and in fact they are nothing but mental conceptions based on, and representing, its most abstract and general feature, to wit: being, *ratio essendi.*

When a photographic plate of slow action is exposed to light in a camera, if developed after a very short exposure, it reveals nothing but a vague and indistinct outline of the object, of which it was intended to reproduce the likeness. It is only after a sufficient exposure that the image of the object will have imprinted itself with all its details in perfect clearness of reproduction. So with the human intellect, the earliest idea that it receives at first sight from any object whatever is that very vague and indistinct notion that 'there is' something before itself, that a being appeals to its cognitive power; but it is only after a careful examination and a progressive investigation, that it may hope to acquire a full knowledge of the said being in all its details.

The idea of Being is therefore the very first intellectual impression that the human mind gathers, although confusedly, from the outward object.[1] That idea of Being, expressed in a negative formula, is the very first of all first principles, the principle of contradiction, viz., 'Being is not not-being.' All other so-called first principles of theoretical knowledge are nothing but various applications of that one and unique first principle. The principle of causality, for instance: 'Nothing takes place without there being some sufficient cause to account for the change,' simply means that no new being can come into existence, springing from Naught, since the contrary would imply that Being and Naught are practically identical. A similar explanation might be given of all other first principles, bringing them all down to the principle of contradiction, if we could afford such a digression for the present.

Those first principles, therefore, are the only ideas that might perhaps in a derived and secondary sense be called 'innate ideas,'

[1] Cf. *Sum. theol.*, 1^{a} 2^{ae}, q. 94, a. 2.

inasmuch as they form themselves naturally and uniformly in every human mind; still, since they are generated from the potentiality of the intellect by the object, they come from without, and are of objective origin, although subjective as to their formation.[1]

All other ideas, those representing things or facts, are acquired by some mysterious intuition by which the human intellect reads into the nature of some given material object, and that process we are now going to try to investigate by means of psychological analysis.[2]

The process of intellection is naturally divided into two successive stages, one which we have in common with the animals, the preliminary stage, the stage of sensuous and imaginative preception; the other, which is peculiar to man, is the stage of abstraction, of properly universal or intellectual knowledge. Sense perception, considered in its general conditions, is easy to describe and presents no special difficulties. Any sensible object that appears before our senses is a complex of various qualities, visible, audible, odorous, tactile, or gustatory. The sensorial apparatus of man will by its five organs, sight, hearing, smell, touch, and taste, separate each group of qualities from the others; each one of them will find its own entrance, organized and adapted for it, into the sentient subject. All those qualities that first enter in separate groups will, in the next instant, be reunited into a sensible imaginative picture that will be the exact representation of that very individual object that stands before us, let us say a dog, for instance, or a tree.

In the animals, knowledge stops at that stage; there is no further progress; the animal can imagine, remember, even form some instinctive judgments, but it cannot have universal ideas — it cannot think. In man there is something more: that raw material, that sensible and single picture of that individual dog, that individual tree may, by the mysterious process of intuition that we call abstraction, be converted, manufactured, into the intellectual universal representation of the tree in itself, or the dog

[1] Cf. Zigliara, *Summa philos., Log.*, No. 55.

[2] Cf. *Sum. theol.*, Part I, q. 85.

in itself, into the 'intelligible' idea of *the* dog, *the* tree. In what manner, then, does that abstraction take place? Every picture that is in the imagination appeals to the intellect, but the intellect may or may not, according to its present condition or circumstances, advert to it; however, there stands the 'phantasm'[1] before the intellectual faculty, apt to arouse its activity, ready for use. It is also admitted by all that a single individual phantasm is not sufficient to cause the intellect to act: it is only by the recurrence of similar appearances, that it is aroused into activity, and then spontaneously abstracts the universal from the singular.

Let us now suppose that several individuals or instances have already appeared in the imagination, that they have left an enduring impress upon it, without however having succeeded, up to the present, in bringing the intellect to the act of manufacturing a universal idea. The intellect has remained inactive, it is in the condition of a looking-glass before which stands an object, but in which no reflection appears, because the object is, as yet, in the dark.

But now the succession of similar experiences is sufficiently complete. A new 'phantasm,' clothed with all its sensible qualities, is offered again to the intellect, together with the remembrances of past similar experiences; then, as if by the turning of some electrical switch, a flood of intellectual light, if we may use the metaphor, flashes upon it; the complex of sensible qualities, that is, the phantasm, assumes an 'intelligible,' immaterial condition, and that immaterial mirror, the intellect, receives in itself the immaterial picture thus revealed, the universal abstract idea.[2]

Following the data of Aristotle, the scholastics therefore divided the intellectual faculty, in itself one and indivisible, into two powers — the active intellect, *intellectus agens*,[3] and the passive intellect, *intellectus possibilis*.[4] The first, the *intellectus agens*, is that power, that aptitude, inherent in the human mind, to dis-

[1] By the word 'phantasm' the Scholastic philosophers understood the representation of a thing as it is in the imagination.

[2] Cf. *Sum. theol.*, Part I, q. 79, a. 2.

[3] *Ibid.*, a. 3.

[4] *Ibid.*, a. 10.

cover and bring into prominence the universal, to illuminate the phantasm with intellectual light, we might say, so as to immaterialize it. The *intellectus possibilis*, on the other hand, is the faculty of perceiving and assimilating the universal idea that has been evolved from the individual by the activity of the *intellectus agens*. It is the mirror in which the immaterial likeness of the object, the universal idea, reflects itself, when it has once been brought forward by the illuminating power of the *intellectus agens*. It is called passive, *possibilis*, from its aptitude to take up any idea; but it is essentially active, as soon as it has acquired the idea. This it is that thinks, judges, reasons, organizes science, and so on; it is the thinking mind itself, of which the *intellectus agens* is only the servant and the tributary.[1] There are, indeed, besides the first one that we have just described and that was called by the Scholastics simple apprehension, two other operations which are proper to the *intellectus possibilis* alone, viz., judgment and reasoning. When once in possession of several ideas through abstraction, the human mind may also mentally associate or dissociate them by judgments that are expressed in propositions; again, it can evolve by reasoning some new judgment from others in which it is implicitly contained. These are the three fundamental operations of the human intellect: perceiving, judging, reasoning; all others are more or less forms or complexes of these three.

III.

After having perused the preceding exposition of St. Thomas's doctrine on the human soul and the human intellect, one more question will naturally occur to a modern mind familiar with post-Kantian philosophy. What were the views of Aquinas concerning the value of human knowledge? What was his standpoint in regard to the epistemological problem?

The answer to this inquiry allows of two different researches, viz., first, stating and defining that standpoint, and secondly, solving from a Thomistic point of view the difficulties that might be urged against it from a Kantian point of view. But as the second part of such a study would imply a critical examination

[1] Cf. *Opusc. de potent. animæ*, ch. vi.

of the Kantian system as a whole, we shall for the present refrain from such an attempt, and content ourselves with stating St. Thomas's position and defining his doctrines concerning the reliability of our knowledge and the grounds on which it rests.

As regards his general conclusions, he decided the question by vindicating the absolute objective value of human knowledge, although not, of course, the infallibility of the individual mind. When the intelligible universal idea has been evolved through the agency of the *intellectus agens* from the sensible phantasm, the question will arise, Where does that intelligible idea come from? It cannot have come out of Naught, for this would be an utter impossibility; the intelligence of man cannot, any more than any other finite being, create anything, not even an idea.[1]

It might be supposed that the idea is produced by the intellect itself from its own substance when it comes in contact with the object, just as a spark will spring from the pole of an electric apparatus when touched by the finger of the operator. Neither St. Thomas nor any of his contemporaries seem even to have considered such a hypothesis, to which, however, Kant's doctrine of the *a priori* forms would come very near. St. Thomas would very likely have answered that, according to all appearances, whereas the electric spark, whatever may be the nature of the object that comes in contact with the pole of the electric machine, is always the same, different sorts of objects give rise in the mind to different ideas of objects with perfect and infallible mutual correspondence, so that the variety of ideas cannot be satisfactorily accounted for, except by the diversity of the objects that generate them in the human mind.

If it be further urged, and this is more distinctively the Kantian position, that there are positive and *de facto* motives to distrust the testimony of our intellectual faculty concerning the external realities, the answer, as already stated, would involve a critical examination of the various motives brought forward to batter down the authority of reason; we are consequently obliged to decline to attempt that in the present article. One thing, however, we shall not hesitate to state in advance, viz., that neither

[1] Cf. *Sum. theol.*, Part I, q. 45, a. 5.

the *a priori* forms of the sensibility, nor the *a priori* categories of the understanding, nor the *antinomies* of reason would have disturbed the serene confidence of St. Thomas in the objective value of our knowledge; for all those objections he would have discarded, maintaining that they did not apply to *his* view of Space and Time, to *his* Categories, to *his* arguments concerning God, the World, and the human soul.

For Aquinas, therefore, if mind discovers the idea in the phantasm of the sensible individual, it is because the idea is contained in that sensible individual as a letter in its envelope or a diamond within its gangue; indeed, it is nothing but the substantial form of the thing in itself ideally reproduced in the *intellectus possibilis*, as the likeness of a person in a looking-glass or on some photographic plate.[1]

Now if the substantial form is capable of being so ideally reproduced, it is because it is itself an idea, a concept of the divine mind embodied in matter, the archetype of which exists in God, and which has been enclosed in it by Him.[2] Hence it follows that the cognitive process is nothing other than a communion with the divine mind through the intermediary of things,[3] a deciphering of the book that He has written in Nature for our instruction; for the whole universe is the handiwork of God and the heavens declare His glory (Ps. 19). Another objection may be raised, viz., since the idea is universal whereas the individual is singular, how can the one be a faithful picture of the other? In that form, apparently the only one in which the epistemological problem appealed to the minds of mediæval philosophers, it gave rise to the celebrated quarrel about the *Universale*.

Without reciting here the various opinions that were set forth at the time, we shall simply reproduce Aquinas's solution of that question. But there is first of all a preliminary observation that will force itself upon our attention: those features, those modes, universality or singularity, are in themselves accidental or external to the essential constituents of the 'form' in itself.[4]

[1] Cf. *Sum. theol.*, Part I, q. 85, a. 2.

[2] *Ibid.*, q. 14, a. 8.

[3] *Ibid.*, ad 3^{um}.

[4] *Ibid.*, q. 85, a. 1, ad 1^{um}; *Opusc. de ente et essentia*, ch. 4.

Just as, in the case of a photographic picture, the likeness of a man must not be supposed to be unlike to him *in repræsentando* because it is apt to be reproduced in an indefinite number of paper prints, so an 'intelligible' likeness, though it be universal, remains the same in the essential features, and universality is a merely extrinsic condition that makes no difference to its representative value.[1]

But, moreover, universality is *not* a creation of the intellect; it is derived from the objective world, it has its objective counterpart. It is because the mind has discovered the same feature in several individuals that it is naturally induced, from the very objective condition of things, to conceive that feature as *one* element, possessed in common by several singulars, as a universal. Universality, therefore, as it is in the mind, has for its objective foundation that plurality by means of which it is participated in by several individuals in the external world.

It is not an arbitrary or spontaneous creation of the mind; it represents something, to wit: the fact that one and the same reality or portion of reality is to be or can be found in several distinct individuals, and we may therefore conclude that 'nothing' is to be discovered in the idea which is not somehow in the object, according to the trite scholastic axiom: *Nihil est in intellectu quin prius fuerit in sensu.*

That is why St. Thomas held that in the first operation of the intellect, the one that we have described above as 'simple apprehension,' there is, on the part of the human mind, not even a possibility of error — and that error can occur only in the second operation (judgment) or in the third (reasoning). With the examination of these last propositions we shall conclude the present study.

First of all, no error can occur in the process of the first operation of the mind, the 'simple apprehension,' except inasmuch as judgment mixes with it to some extent.[2] That assertion is already manifest from the analysis of the process of abstraction that we have given above. In the presence of the object, the intellect may

[1] *loc. cit.*
[2] *Ibid.*, q. 85, a. 5.

or may not advert to it. If it does not, no intellectual action will take place, and therefore there will be no error because no act of intelligence; if, on the contrary, the intellect does advert to the object as presented by the imagination, and an act of intelligence does indeed take place, it will understand the object fully or at least partially. If some person comes toward me in the dark, I may recognize that this is a human being, without, however, being able to discern what person it is. In that case, I shall gather only partial information, but a partial truth implies no error of itself except in so far as my mind may mistake that partial truth for a complete one.

If in the presence of some dubious animal, let us say a coral, for instance, I notice in it some vegetative properties, without, however, discovering the animal characteristics that are to be found in it at the same time, and if, therefore, I gather from that incomplete observation the idea that there is something vegetative in the coral, there is as yet no error in that partial truth, unless I *judge* that a coral is only and exclusively a plant; but forming such an erroneous opinion is going beyond the limits of simple apprehension, is launching into a judgment, into the second operation of the mind, in which, as well as in the third, viz., reasoning, no natural privilege of immunity from error can be guaranteed to us.

The causes of the errors that may befall the individual mind in its search for truth are subtle and manifold; all of us are more or less doomed to fall into mistakes now and then, but this is no proof that the human mind itself is not made for truth, or is incapable of reaching it. There is no reason why we should at all doubt of its inherent capacity to grasp truth. Judgment, therefore, and reasoning are also operations by which we are capable of attaining to the truth. This will be our concluding proposition.

Judging is mentally associating or dissociating two concepts, two essences, on the basis of some characteristics that they have in common.[1] Having, for instance, perceived the idea of animal and that of biped, I may form the judgment: 'An animal may be a biped.' Now the two ideas that are thus associated in the

[1] *Sum. theol.*, Part I, q. 85, a. 5.

foregoing judgment are, as we have shown, objective in their origin and objective in their representative value. Supposing, therefore, that a judgment is not founded on ignorance, or an imperfect knowledge of the two elements involved as subject and predicate, the mutual agreement on which my judgment is based is inherent in those two ideas themselves; but then it must exist also in the things that are represented by those ideas, and of which they are merely the mental substitutes, the intellectual likenesses. We have, therefore, consistently to admit that our judgments have a real objective value in and through the ideas on which they are based.

Reasoning, as St. Thomas remarks,[1] is a property of the human intellect founded on its relative weakness and inferiority, that makes it unable to embrace the whole domain of truth at one glance, and to discover at once all that is contained in one idea. This makes it necessary for it to grope its way, to run successively (*discurrere*) from one judgment to another, so as to proceed from known propositions to unknown truths. It may, therefore, be defined as the process by which, be it inductive or deductive, on the basis of two given mental judgments, we are enabled by bringing them together to perceive the truth of a third, which, without the help thus afforded by the two first, would either never have occurred to us, or would have remained forever dubious in our minds, exactly as the meeting of two electric currents, the positive and the negative, will cause an electric spark to flash in the darkness.

Here, again, while having more than sufficient motives for distrusting the capability of the individual mind, there is no cause why we should doubt the objective value of the reasoning process in itself, provided all the necessary precautions against a possible error be taken. For if the two premises are objectively true and fully understood, and if no flaw finds its way into the process of comparison, the third judgment that springs from it must also be considered as objectively true and reliable, since it is but the inherent and natural content of objectively valid judgments. We are therefore entitled legitimately to extend the conclusion of our reasonings to the objective world without.

[1] *Quæst. disput. de verit.*, q. 15, a. 1.

To sum up in one sentence the whole epistemological system of Aquinas, we should say: Man's mind is, in itself, a faithful mirror of the external universe, that mirrors itself in it ideally and immaterially. Such would be, on the principles of St. Thomas, the outcome of the foregoing study.

Readers who have had the patience to read the present article thus far, will find perhaps that we have touched upon a great number of questions, while leaving an even greater number untouched. Our excuse is that this exposition could not be more than an epitome of the principal tenets of the Thomistic system, and that, if thoroughly developed and enlarged to its proper size, it might easily fill several volumes. If, however, we have succeeded in making it sufficiently suggestive to induce some reflective minds to turn to St. Thomas himself, we shall be fully satisfied with the result. Nothing can supply the want of direct contact with the text and the knowledge of an author which we obtain by communing immediately with his thoughts in his own original works. Thus only from a conscientious and careful study, can one expect to experience that 'rest of mind' (*quies animi*) in the possessed truth, in which Aquinas, in conformity with the dicta of the great Aristotle, made the natural beatitude of the soul consist — that rest being the loftiest enjoyment of our noblest faculty exercised about its highest possible object.

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ETHICS, A SCIENCE.

I. In popular parlance art and science are often confused. After seeing some brilliant bit of dexterity, as in some difficult game, we sometimes hear persons exclaiming: "Look at the science of that," whereas it is quite possible that the performer has very crude and ill-defined notions about his methods. He has the knack of the thing, but he cannot explain wherein the knack consists. In such a case the term science is misapplied. Science, as its etymology would indicate, is knowledge, not cleverness, but all facile correct performance has the character of art, which may be broadly defined as skill in the production, or skilled activity directed to the production, of some desired object other than knowledge. For example, the art of music is the activity which concerns itself with the production of certain sounds that please the ear by reason of their rhythmic character, their melody or their harmony. The musician may know nothing of the natural principles which underlie the operations of sound. He may be absolutely ignorant of the fact that different wave-lengths of vibrating atmosphere correspond to different pitches of the sound heard. He may know nothing of the theory of over-tones; he need not even have knowledge of the principles of counterpoint and harmony; and yet, in spite of all his musical ignorance, he may be able to please the most fastidious taste with the rich, sympathetic, soul-stirring or soul-quieting character of his musical performance. On the other hand, who has not known some tone-scientist who can tell all about timbre, melody, harmony, counterpoint, and a thousand other things in music, who knows how to finger the keys or the strings, whose execution is faultless, and yet whose playing 'has no soul in it'? We thus see that there is an art of music and there is a science of music. The musical scientist does not primarily aim at the production of music, but at the understanding of it. His ideal is complete knowledge of the principles underlying the art of music. His compositions are technical articles for scientific journals, not

operas or oratorios or songs. The musical artist, on the contrary, as artist, does not care for these laborious productions of the scientist, except in so far as they may perhaps enable him to attain some artistic effect he is striving after. His productions are melodies and symphonies. He makes music; the musical scientist knows music. The motives actuating these two persons are very different. The scientist is prompted by love for the true, the artist by a love for the beautiful.

Very frequently, as in the case of music, the scientist studies what the artist produces. Indeed, every art forms or may form the subject matter of a science. Thus the art of building has given rise to the science of architecture, and the art of linguistic expression to such various sciences as rhetoric, etymology, syntax, prosody, phonetics, poetics. But not every science has a corresponding art; thus the science of palæontology, which is concerned with fossils, has no art corresponding to it, for the reason that the facts which palæontology studies are not produced by human agency. Men discover, they do not make, genuine fossils. For our present purpose, we may classify all objects of scientific investigation into two distinct groups, one including all objects of human production and achievement, the other including objects not brought about by human agency. The sciences which deal with objects of the first group have correlated arts; those which deal with objects of the second group have not.

While in the latter there is no danger of confusing art with science, — for the very good reason that there is no art present to lead to confusion, — in the former case confusion is frequent. A base-ball pitcher is said to be 'scientific' in his curves, when, as a matter of fact, he is not scientific at all. He 'knows how' to do it, but he does not know why he does it so. In this case an art is called a science. Often the mistake is the other way round; that is, a science is called an art. For instance, logic is quite generally recognized now as a science and not an art, and yet not long ago perhaps the majority of writers on logic insisted on calling it an art. This was because correct thinking is an art, and it was uncritically assumed that therefore a knowledge of the methods of correct thinking must also be an art. The object of

knowledge — the art of thinking — was mistakenly confused with a knowledge of the principles controlling that object, *i. e.*, with the science of logic.

A mistake of this sort is at work in the minds of those who define ethics as the art of correct conduct. Morality is such an art, in which various persons are more or less proficient. Some moral lives have the high æsthetic finish of an exquisite poem, others the massive grandeur of a noble pile of masonry, while unfortunately too many are comparable only to ribald verse or meretricious architecture. When we speak of a man's weaving the web of his own character, of his hewing it out of unpromising material, of his refining it in the fire of adversity, and so forth, we are saying that life is an art, character an art-product, virtue an art-quality.

But this is no reason why ethics should be an art, any more than the fact that poetry is an art makes an art of poetics. Ethics bears the same relation to the moral life that poetics bears to poetic activity and poetic product. Ethics is the science of the principles of an art; it is a systematized knowledge of the ways in which a certain kind of art-activity is carried on, of the reasons why the results of that activity produce certain effects, in short, of the various relations in which a particular art-activity and art-product stand. Morality is an empirical fact having various bearings; the moral man and the immoral man are phenomena of every-day life, and are as amenable to scientific investigation as are poems and financial movements, chemical reactions and mechanical operations. There are many questions which the experienced existence of morality and immorality challenges us to answer if we can. Ethics, in its widest sense, is the name given to any systematic attempt to answer these questions. Such answers do not constitute an art but a more or less complete science.

II. The question has been much discussed whether ethics is a descriptive science. The majority of writers on ethics have considered it not descriptive, but normative; some have admitted the presence of a descriptive feature in ethics, but have recognized along with this a large independent mass of normative

character, while a few maintain that it is entirely descriptive and nowise normative.

A normative science may be, and often is, defined as a science which lays down standards, rules, or laws to be used in some sphere of activity. The question here is as to the meaning of the term 'lay down.' In what sense can science be said to lay down rules for the guidance of the simple? Take the science of hygiene for example. This science is regarded and expounded by many as a system of rules of practice: "Eat this, drink that, breathe deep, bathe often, and eschew excesses." But a little reflection will serve to show that what is really scientific in these prescriptions is not their mandatory character, but the implied statements of connection between certain courses of action and certain generally desired ends. "If thou dost these things, happy shalt thou be, and it shall be well with thee." The prescriptions we find in scientific writings are disguised statements of facts. The true scientist, as scientist, does not advise or exhort. He gives an unimpassioned recital of the facts in their connections. He does not lay down any rules of any sort for the guidance of anybody. He merely says: "This is the way things are." That is, all science is descriptive — descriptive not merely of isolated individual objects, but of objects in their interrelations. Now if a normative science is defined as a science which is not descriptive, it is not a science at all. Science is knowledge, not will. It is indicative, not imperative. Hence, if there are to be any normative sciences at all, another definition must be sought for them than that given above. A point of departure for such definition can be obtained in the fact that many things known by science have a bearing upon human desires and human wills. While knowledge is not power, it is light, and makes possible the use of power along lines of advantage to the agent. Not only may we know that strychnine is $C_{21}H_{22}N_2O_2$, obtained from nux vomica, insoluble in water and ether and scarcely soluble in absolute alcohol, but readily soluble in ordinary alcohol, and when so dissolved turning the plane of polarization to the left; we may also know that it is a most powerful poison, and taken in any considerable quantities causes death. Now every one of these

statements about strychnine is descriptive, and purely so, the last no less than any of the previous ones. But to most persons there is a very decided difference in the statements. The last has a tendency to convert itself into an imperative. Now why this difference? The answer is easy. None of the items of information above given concerning strychnine except the last makes any appeal to the desires and will of most persons. The last item of information, however, has a very direct relation to normal human desires. Very few men want to be poisoned, hence the fact that strychnine poisons can be indirectly stated in a prohibition: "Don't eat it." The prohibition, however, taken literally as it stands, is not an expression of knowledge, but of will — the will to live and let live. This will abhors strychnine because it is known that strychnine tends to antagonize the will. Knowledge here determines the direction of the will, but the knowledge is not will, and the expression of the knowledge (in the indicative) must not be confounded with the expression of will (in the imperative). Science does not lay down the rule to avoid eating strychnine; it ascertains the fact that the man who eats strychnine, except in very small doses, dies. In view of this scientific information, the normal human will lays down the law to itself not to take strychnine as food. We may generalize from this case and say that no science lays down any rules whatever, hence, if a normative science is defined as a science that lays down rules, it must be replied that it is by that token not a science.

But while a science may not lay down rules in the sense of imposing them upon men, it may have rules of procedure as its object matter. There are many sciences of this kind. For instance, the science of jurisprudence does not make the laws of the land. It is nothing but the more or less systematic knowledge of the various laws that have prevailed and do prevail, of the various tendencies for good or evil possessed by these laws, and of the various objects of juridical will these laws indicate; in fine, it is knowledge of the various principles of law. Jurisprudence may disclose the disastrous results of a certain type of laws, as, for example, punitive laws impossible of enforcement; but as a *science* it goes no further. It does not proceed to dep-

recate such laws; but the legislative reformer and the practical statesman desirous of avoiding the evils resulting from the presence of such laws in the code, urges their repeal. Science suggests procedure, but the demand for procedure is not made by knowledge, but by will; not by unimpassioned science, but by strong clamant desires for certain objects. Science sets the objects before us and discloses the means by which they can be secured; but unless, when means and end are thus set before us, our affections and desires rise up and set the machinery of will to work, there can be no imperative issued. Jurisprudence, then, does not lay down laws; it merely sets forth facts, and men's likings and dislikes for these facts prompt them to action. But the facts which jurisprudence sets forth are facts in connection with rules of conduct. It is normative in the sense that it is a science which deals descriptively with norms.

What is true of jurisprudence is true also of ethics. Ethics did not create morality, nor does it legislate to moral beings better moral laws. It describes the various types of morality and the results flowing severally from these types. But it is not imperious or dictatorial. It does not command men everywhere to repent, to reform their ideals and better their habits. It merely says: "There are various ways of behaving observable among men, and others conceivable. These various ways have these respective characteristics and consequences." If a man says, "In defiance of these consequences, I will to conduct myself in this way," ethics is unconcerned, for ethics is systematic knowledge, and knowledge as mere knowledge is equally hospitable to every existent fact and to every law of connection. As Huxley, I think it was, once remarked, the fiercest cataclysms of nature, the wreck of matter and the crash of worlds, are as orderly occurrences and as beautiful illustrations of the laws of nature as the sabbatical peace of a summer sea. So are human folly and madness and immorality as much ethical phenomena to be treated by the science of ethics as are moral walk and conversation. But ethics does and can say to the immoral, "Your conduct is mischievous and detestable to those of your fellows who are normal,"— which again is a purely descriptive statement.

What has been said makes it evident that jurisprudence and ethics are abstract. They do not give expression to the whole psychic attitude of the scientist toward the objects of his investigation. The jurisconsult, unless all milk of human kindness is dried up in him, is not only a man who knows law, but also one who likes some kind of law and some principles of legislation better than others. His legal knowledge is only a part of his mental endowment, for to a scientist science may not be the only thing of value in the universe. So to the ethical scientist practical moral questions may be of stupendous interest. He may be the supporter of a crusade against intemperance or impure civil service; but this fact would be due to his temperament and general affectional nature, enlightened, it is true, but not created, by his ethical knowledge. An ethicist is not *ipso facto* a man of high moral ideas, but his scientific impartiality need not make him a practically impartial onlooker in the theatre of the moral life. As a scientist he may be impartial, as a man he may have his decided preferences. But his actual preferences must not be allowed to interfere with his impartial scientific attitude. An unimpassioned survey of all the accessible facts, unbiased generalization from the facts to general principles, — this is the task of ethics and this task is entirely descriptive.

But such description does not exclude scientific criticism. It is compatible with an appreciation of objective values. This may not at first be clear, for are not all values subjective? Yes, in a certain sense values are subjective. But in that same sense it would be hard to find anything objective. Value may be as objective as color. No ornithologist is deterred from describing orioles as orange-breasted, because, forsooth, to the color-blind man they may be dirty gray. Again, the chemist does not feel it necessary to qualify as subjective the statement that hydrogen sulphide has a stinking smell, because only to normal olfactory organs is the smell disagreeable. Many — if not all — objective scientific statements are objective in the sense of being valid of all normal human experience. Now objects have value that is objective in the same sense. For instance, money has an objective value, not because apart from the affective natures

of conscious beings it would still be of absolute worth, but because its value is a generally recognized fact in a community of conscious beings. On this account it is possible for the economist to criticise the efficiency of the various articles which serve as money. This criticism consists in the purely objective description of the consequences of the use of these various things. He shows that, when a great amount of paper is circulated and is not redeemable by gold or silver, it depreciates. This is criticism, but it is mere description. Now this unimpassioned description of consequences which are disagreeable is easily confounded with a hortatory treatment of the subject, for the very good reason that often the economist, assuming the existence of certain likes and dislikes, loads his statement of economic fact with economic harangue, and because the reader often meets the scientific statement with very strong emotional and voluntary reaction. But the harangue of the economist and the feelings and resolutions of the reader or hearer are not science, though they may be the normal response to scientifically ascertained fact. The science in it all is nothing but the methodically obtained knowledge of fact; and this knowledge often includes, as in this case, a knowledge of unpalatable circumstances. An unimpassioned expression of such knowledge of unrelished but removable fact is scientific criticism. Such criticism may play a large part in ethics; but in any objective ethics the criticism must not be a philippic against some practice merely obnoxious to isolated personal prejudice, but a true statement of the harmful consequences of certain modes of conduct.

III. It is often debated whether ethics is a theoretical or a practical science. What has already been said as to the normative and yet merely descriptive character of ethics should help us solve this question. Just as all sciences are descriptive, so all sciences are theoretical, that is, they are concerned with the rational explanation of experienced facts. Rational explanation is not the *a priori* demonstration of the necessity of facts. That is, it is not an attempt to show that things cannot possibly be other than they are. It is merely ascertainment of actual uniformities of connection between phenomena, *i. e.*, it is compre-

hension of natural principles or natural laws. A natural principle or natural law is an identity observable in nature, a discovered or discoverable sameness in the ways in which natural objects behave, or in the relations obtaining between certain objects. Thus a law of mechanics is an ascertainable identity in the way physical objects move or tend to move. The law of gravitation is a well-known example. This law is nothing but the fact that material bodies move or tend to move toward each other in a similar way, a way capable of description in the Newtonian formula: "Every particle of matter in the universe attracts every other particle with a force directly proportional to the mass of the attracting particles, and inversely to the square of the distance between them." So far as we know, every particle of matter might repel instead of attract every other particle of matter. And even if it did attract, it might attract in, say, inverse proportion to the distance instead of to the square of the distance between them. The number of possible substitutes for the actually obtaining law of gravitation is beyond recounting. The Newtonian law given above is *the* law only because it *is* the law. But though the law does not carry with it a self-evidence which excludes all possible rivals, as a matter of fact it satisfactorily *explains* many things otherwise inexplicable to our intelligence. We are so constituted that we do not find intellectual rest until the initial disjointedness of experience is removed by the discovery of uniformities of relations and of behavior in experienced objects. Any such discovery which brings order into what was chaos is highly gratifying to us as rational beings, for our theoretical reason is a tendency — of the nature of instinct — to look for such uniformities, and to see things in relations. Any object is 'explained' when this instinct is gratified. Now it would carry us too far afield to prove this statement in detail, *i. e.*, to show that in all explanation this is what happens. The exhibition of this fact belongs to the science of logic or epistemology. Here all that can be done is to state dogmatically that explanation is the satisfaction of the intellectual instinct to comprehend the laws of things, or their principles, or the uniformities of their relation and behavior,—these expressions all meaning the same thing.

Now the Greek word θεωρεῖν means originally to behold, to be a spectator of. But in psychological parlance, it was used to designate the contemplation of things in their relations, the grasp of them in their order, the knowledge of their laws. A theoretical knowledge of anything is properly, therefore, a systematic knowledge, a knowledge of them as systematically interrelated, a knowledge of their principles of connection. But this is exactly what every true science is. Hence every science is, as science, theoretical. To call a science theoretical is to commit a tautology, but, as with many tautologies, a useful end is gained. The attention is riveted by the tautological adjective on an essential characteristic, which may easily be, and in this case has been, ignored. All science, to repeat, is theoretical; it is a matter of *seeing*, not of *doing*, and no new mark is added to the concept of science by calling it theoretical, but the danger is averted of supposing that a science may not be theoretical.

The fact, however, that all science is theoretical, does not preclude some sciences from being practical, provided that by practical is meant what it often means, namely, facilitating practice, advantageous in practice, having a direct bearing upon practice. Thus a practical suggestion is one that helps to the doing of something desired; a practical idea is one that aids in the accomplishment of some purpose; a practical rule is one the observance of which is of value in the performance of some work. Now it requires but little reflection to observe that very much of our knowledge is directly practical in this sense. It is not itself a doing of some work, unless we call the activity of knowing itself a work, but it is indispensable for the performance of the complicated work which men have to do. This is so obviously true that it is now often maintained that knowledge is to be accounted for as a result of natural selection. This means that knowledge as a psychic phenomenon is so useful to the knower that by its help he wins in the struggle for existence, and is thereby enabled to propagate his kind, transmitting to his descendants his useful power of knowing. Thus we have what has been called the doctrine of the bionomic value of knowledge, and the advocates of this doctrine include within it also the asser-

tion of the bionomic[1] value of science. This is, of course, to be expected. If knowledge is selected for survival because of its utility to the knower and to his race, systematic knowledge, or science, would disappear as a temporary freak unless it were likewise useful.

Now it is not necessary that we examine this doctrine in its entirety before we avail ourselves of the truth brought out by it. That truth is the truth of the practical utility of science. It is to science that we owe a very large part of our modern civilization, with all its practical achievements. But this is saying that science is practical. It helps in the performance of human work. But this practicality of science is not incompatible with its theoretical character. Indeed, it is because of its theoretical character that it is so practical. That is, it is because science is such a comprehensive knowledge of things in their interconnections and their laws that men with this knowledge of nature can do things never dreamed of in earlier days of human ignorance. Nothing has shown itself in human history to be so practical as broad, inclusive theory — if the theory be true. The world's work does not need less theory, but more. Infinitely much is waiting to be done, but it will wait till some one who *knows* comes along; it is held back because theoretical science has not gone forward more rapidly. The theorist, it is true, is not himself necessarily practical. But his knowledge communicated to others more interested in achievement than in science is the light which reveals the pathway human progress is to take.

But not all theoretical sciences have proved as yet to be equally practical. Not all have equal value in indicating ways by which objects of human desire can be reached. But no one can safely and confidently predict that these relative values will remain constant. Unexpectedly even to specialists in a science, that science may at a stroke prove to be one of the utmost value to the practical life of the world. All that can be done is to say that up to the present time one science has yielded more practical

[1] *I. e.*, value in promoting life. Bionomics is the science of "the economics of the living organism" (Minot, *Science*, N. S., Vol. XXI, No. 392), *i. e.*, the science of the principles which are involved in the maintenance of living organisms.

results than another. But this is no reason for discouragement in the pursuit of the less practical science, for what is last to-day may become first to-morrow. Thus we see that the practical character of any theoretical science is a variable quantity, and no science is to be judged unpractical merely because as yet it has borne no useful fruits. The seed-sowing must precede the harvest, and it is not always the most rapidly maturing crops that bring in the largest returns.

Now applying what has been said to ethics, we may say that ethics is a theoretical science, as all sciences are. Its practicality is hard to estimate, but is undoubtedly great. Not that it has any great money value, but money values are not the sole values. The practical value of ethics consists largely in two ends it gains. First, it secures a progressive liberation of the mind from the bondage of moral prejudices, many of which not only are irksome, but are serious bars to progress in civilization. It requires but little knowledge of the world to convince the open-minded observer that some of the heaviest weights men carry in the race of life are moral weights. Morality is itself not a handicap — far from it; it is one of the things without which no civilization is possible at all. But not all types of morality are equally conducive to human welfare. The morality of unenlightened benevolence, which requires that no beggar shall be turned from the door without a gift of some kind, has pauperized many a man who if alms had not been forthcoming would have turned his hands to useful work. The morality of Pharisaic condemnation of all fallen women has shut the door of reform in the face of many women who have loved not wisely but too well. The morality of alcoholic prohibition has closed law-abiding saloons, to open joints where all vice thrives. The morality of "Sunday closing" has in New York given rise to the Raines Law Hotel, and put a premium upon brothel-keeping. These are but a few instances from present day life in our own country of the incalculable harm which certain prevalent types of morality can work in a commuity. If we look to other places and other times, we can multiply instances without limit. Now one of the most potent correc-

tives of misguided morality is scientific ethical knowledge. It is, of course, not the only corrective. He would be a rabid intellectualist who should suppose that knowledge is the panacea of moral ills. The unconscious operation of natural laws does much toward eliminating noxious ideas. Many forms of harmful morality have been eliminated by natural selection. Races that have sunk deep in moral error have often lost stamina, and proved easy prey, by reason of their very perversity, to races of a better moral fibre. Again, unconscious imitation and appropriation of alien ideals have been mighty instruments of moral reform. Good communications have often purified bad manners and bad morals. But even here more or less systematic criticism of two conflicting codes has perhaps always played a part in helping to the installation of the better type of ideals. But granting that there are always many agencies at work for the betterment of morality, other than scientific criticism of morality, this criticism is and has been an extremely salutary influence in moral progress, in that it weakens the hold of blind and baneful prejudice upon the minds of men. Ethics, then, helps men to emancipate themselves from the tyranny of false and vicious ideals.

But its effects may be positive as well as negative, although, of course, here as elsewhere the positive and the negative go hand in hand. The positive work of ethics in moral reconstruction consists in the sometimes slow, sometimes rapid, emergence of new and better ideals, suggested by study of actual moral conditions. Liberation from prejudice would do little good if something affirmative, some positive ideals newly espoused, did not take their place. It would be the old story of casting a devil out of a house and leaving it swept and garnished, only to furnish habitation for seven other devils worse than the first. The empty room must be filled with something better, and scientific knowledge will often reveal what that something better should be. Thus the abolition of indiscriminate private charity might easily lead to reckless indifference to misfortune — something must be done in a wise way for those who cannot take care of themselves. A careful study of the actual conditions, and conservative experimentation, may suggest a way in which the

deserving can be helped without flooding the community with paupers. Sympathy for the victim of unscrupulous lust may give place to an indifference for female virtue. The evil of stoning every adultress must be removed, not by ignoring the adultery, but by devising some way that shall make it possible for the woman to go and sin no more. And knowledge of human nature and human conditions is indispensable for securing this consummation. This knowledge systematized is a part of ethics — it may be not of any ethics yet actualized, but of that ideal ethics for the realization of which every ethical scientist works. For it must be remembered that ethics, like every other science, is imperfect. We know only in part, but we strive toward the day when that which is perfect shall come and that which is in part shall be done away. This is the unattainable ideal of every science. The imperfection of science is its incentive, not its despair.

Ethics, therefore, is to be reckoned, both on the ground of its actual achievement, and more especially on the ground of its prospective accomplishment, as a practical science, though as science it is theoretical through and through. This combination of the theoretical and the practical in the character of the science gives rise to the question, In what spirit should it be prosecuted? Shall we study ethics out of intellectual curiosity or for its utility? The answer is that there is no necessary incompatibility in the two motives. They become incompatible only if an inordinate desire to turn our knowledge to practical use leads to undue haste in observation and generalization, and to lack of scientific caution generally. What makes knowledge scientific is not this or that motive which prompts to its acquisition. It is method, not motive, that counts. A man is no less of a scientific ethicist, even if he pursues his study mainly because thereby he can support his family and keep his own body and soul together — provided only he works with scientific caution in gathering and sifting his materials and in his generalizations. There is danger always that an extrinsic interest in a scientific subject may impair the integrity of scientific method. Hence the man who pursues a science merely because he hungers and thirsts after knowledge

is more likely, other things being equal, to get knowledge than the man who is prompted by other cravings as well. But other things are not always equal, and the one thing needful in any scientific study is to keep one's methods bright and clean and to use them scrupulously.

But desire for utilization of results is not the chief danger in ethics. For the objects studied are objects which generally make an indefinable claim to our veneration. But in ethics loyalty to traditional duty must yield to loyalty to truth. No reverence for moral laws, no devotion to moral ideals, however hallowed either laws or ideals may be by immemorial custom or by religious association, must be allowed to interfere with an impartial handling of them. As well may we expect the awe-stricken worshipper of a volcano to make any valuable contribution to the scientific knowledge of volcanic disturbances as to expect the unquestioning moral devotee to advance the study of morality. The man who trembles before the voice of conscience is not, while the fear is on him, in a suitable frame of mind to pursue with profit the ethical science. He is an important moral phenomenon; he is not likely to be an important moral theorist. This is said without any disrespect for such a man. He is without doubt generally a very useful member of society, and in his way he is as useful as the ethicist is in his. One star differeth from another star in glory, and the exceeding glory is not always in the scientific star. The unquestioning loyalty of a man to his sacred duty may save a nation in a crisis; what scientist has ever achieved such a result? And even in the ordinary round of life the awed servant of duty is one variety of the salt of the earth, with perhaps more savor in it than is to be found in the scientific sort. But this is neither here nor there. The point is that not every man is by nature or disposition qualified for scientific work, and of those so qualified some are not qualified for work in the science of ethics, because they cannot deal with moral phenomena without fear and without favor.

The ethicist, however, need not be without moral enthusiasm, but his enthusiasm must be a zeal according to his ethical knowledge, not blind devotion to unchallenged duties. Yet it is well

that he should have had such a devotion. The larger and more varied his moral experience, the better fitted is he to deal with moral phenomena, provided only he can hold his experience off at arm's length and survey it as an objective fact. In support of this view, the weighty authority of Aristotle may be urged. "Everybody," said he, "is competent to judge the subjects which he understands, and is a good judge of them. It follows that in particular subjects it is a person of special education and in general a person of universal education, who is a good judge. Hence the young are not proper students of political[1] science, as they have no experience of the actions of life which form the premisses and subjects of the reasonings. Also it may be added that from their tendency to follow their emotions they will not study the subject to any purpose or profit." But by youthfulness Aristotle means not shortness of days, but immaturity of experience and lack of perspective, for he goes on to explain: "It makes no difference whether a person is young in years or youthful in character; for the defect of which I speak is not one of time, but is due to the emotional character of his life and pursuits. Knowledge is as useless to such a person as it is to an intemperate person. But where the desires and actions of people are regulated by reason, the knowledge of these subjects will be extremely valuable." Aristotle thus looked at ethics as having merely a practical value. "Its end is not knowledge, but action." But while he thus overlooked the purely theoretical character of the science, he rightly emphasized the need of personal moral experience, and also the need of regarding the experience with the clear, impartial eye of reason, not through the glasses of passion which cast a glamour over life and pervert the judgment. It is judgment that we want: calm, sober, collected judgment on life.

IV. It is an extremely important matter that, if ethics be a science, its methods should be scientific. Historically, various methods have been pursued, each with its own assumptions.

[1] Aristotle considered ethics a branch of political science, or rather, as we should call it in these days, of sociology. Hence the pertinence of this quotation to the present purpose. Indeed, it was in its bearings upon ethics that the remark was made. *Nic. Ethics*, I, 1. (Welldon's tr., pp. 4 and 5.)

Thus, for example, one of the most popular methods has been the theological. There can be no doubt that morality and religion have been closely connected in human experience. It is true that in some cases morality seems to have cast loose from religion altogether, but there are many thinkers who regard this divorce as merely temporary and accidental. They maintain that morality is rooted in man's relation to the Infinite and Eternal Ground of Things. Hence, they proceed, we must first work out a true theology, and ethics will be but a corollary from it. Not only is this a favorite way of dealing with the subject in books, but also in popular thought there is a marked tendency to regard morality as somehow dependent upon religion. Now, whatever may be said in favor of this method of solving the ethical problem, it is clear that an ethics thus obtained is not a natural science. It may satisfy some thinkers, but there always have been, and there probably always will be, persons unsatisfied with this procedure, as they are unsatisfied with an attempt to study the nature of the physical universe by theological means. Why not take the facts of the moral life and investigate them by the same methods that we apply to the study of other empirical facts? Why not be scientific in our treatment of the subject? When we come to think of it, it is hard to see why not, unless there is something in the nature of this particular subject which makes it intractable by this method; and that there is such a difficulty cannot properly be asserted until various attempts have been made without success. Even then the failure may be due to the difficulty of the subject, and not to any impossibility inherent in the nature of the problem. Before scientific ethics can be ruled out as impracticable, it must be shown conclusively that there is something in morality which science cannot grapple with, and no satisfactory demonstration of this fact has been given. It is easy enough to say what science has not done. It is not easy to say what science cannot do. It may be true that, after all the thought that has been spent on morality by men who have approached the subject with scientific methods, much remains unillumined; that does not prove that ethics is not and cannot be a science. As a matter of fact, however, science has done more than theology to make

morality intelligible, and there is every reason to hope that it will do more in the future than in the past.

But while scientific, ethics does not boast of mathematical precision. The complexity of the subject is very great, and must be borne in mind by the reader of scientific works on ethics, else he will probably demand an exactness of statement which no one is prepared to make. Precise mathematical laws holding in the realm of morals have not been discovered. Rigid formulæ such as one finds in mechanics there are none. As Aristotle remarked long ago: "An educated person will expect accuracy in each subject only so far as the nature of the subject allows; he might as well accept probable reasoning from a mathematician as require demonstrative proofs from a rhetorician." "Our statement of the case will be adequate, if it be made with all such clearness as the subject-matter admits."[1]

In this respect ethics is in similar case with such sciences as economics. No one expects an economist to lay down laws of the relations between supply and demand so exact that, given the number of persons who shall within a month desire to buy a certain commodity, and the amount of that commodity then available, any calculator can sit down and compute the exact price at which that commodity can be had in open market thirty days hence. The shrewd merchant and the successful speculator are engaged in such problems as this, and the uncertainty of their calculations shows that they have no infallible formula to fall back on. A civil engineer can tell quite exactly how many cubic yards must be excavated from a hillside in order to secure a road-bed of a certain grade and a certain breadth; but no manufacturer, unless he is working under contract, can tell with like precision how many yards of cloth he should turn out in order to be sure of securing a certain price for the cloth. There are too many unknown factors in the problem. If conditions remain very much the same as they have been, his calculations may be quite accurate; but an unreasonable financial panic, weather unparalleled even 'in the memory of the oldest inhabitant,' some new device in manufacture, these and a hundred

[1] Weldon's tr. of *Nic. Ethics*, pp. 4 and 3.

other unforeseen conditions may upset all his calculations. His problem is too complex for absolutely accurate mathematical treatment, and yet, in spite of this lack of mathematical precision in economic matters, there is a science of economics. What makes a study scientific is not so much the mathematical accuracy of its formulæ, as the method in which it is conducted. Now scientific ethics is scientific, as scientific economics is. It discovers certain laws, but cannot claim upon the basis of these laws to predict the moral future of mankind. These laws express general tendencies, and the knowledge of them serves to make actual morality much more intelligible.

V. We must now take a brief glance at the claim often made that ethics is a branch of philosophy, not a science. A thorough examination of this claim would necessitate the raising of questions as to the nature, tasks, and method of philosophy which we cannot attempt to answer here. For instance, before giving any adequate and satisfactory answer to the question whether ethics is a science or a part of philosophy, it would be necessary to ask whether science and philosophy are mutually exclusive, as the question would seem to assume. Is philosophy non-scientific, and is science non-philosophical? Various answers have been given to these questions, but it would require too much space here to discuss them and to justify ourselves in the selection of some one answer as preferable to the others. Whether there may be a valid philosophical ethics, and whether, if there be, its contents differ from those of a scientific ethics, and how its methods are different from those pursued by scientific ethics, — all these questions must be passed over, as requiring more space than is available here for their discussion. This article is written in the belief that when a satisfactory delimitation of the spheres of science and philosophy is made, the two will be found to have more points of connection than is commonly supposed; and yet that ethics will be found on the scientific rather than on the philosophical side of the boundary line. For all the data which the science of ethics must describe, organize, and explain are empirical data of the same order as the data of the other special sciences. The ethicist takes these data

and by comparison, by generalization of observed principles of connection, by the formation and testing of hypotheses — in short, by the methods of procedure called induction — he attempts to understand them. Ethics, dealing with phenomena or facts of experience by inductive methods, is an empirical science.

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REVIEWS OF BOOKS.

La logique de Leibniz d'après des documents inédits. Par LOUIS COUTURAT. Paris, Alcan, 1901. — pp. xiv, 608.

The body of this work (pp. 1–441) consists of a short critical Conclusion (pp. 431–441), preceded by nine expository chapters dealing with the following subjects: (1) The Syllogistic, (2) the 'Combinatoria,' (3) the Universal Language, (4) the Universal Characteristic, (5) the Encyclopædia, (6) the 'General Science,' (7) the Universal Mathematics, (8) the Logical Calculus, (9) the Geometrical Calculus. Then follow (pp. 443–538) five Appendices: (1) Abstract of the Classical Logic, (2) Leibniz and Hobbes, their Logic, their Nominalism, (3) Some Mathematical Discoveries of Leibniz, connected with the Combinatoria and the Characteristic, (4) On Leibniz as Founder of Academies, (5) On the Geometrical Calculus of Grassmann. The work closes (pp. 539–608) with twenty notes, a table of bibliographical abbreviations, a table of correspondence between the editions of Gerhardt and Erdmann, indexes, etc.

The book is, from every point of view, a noteworthy one. It is the product of an author who is at once — a rare combination — a trained mathematician, logician, and philosopher. It is the result of laborious and scholarly research, including a careful study of many important unpublished writings of Leibniz, neglected even by Gerhardt. Out of a great wealth of material all pertinent facts have been seized upon, admirably marshalled without apparent distortion or undue emphasis, and the whole presented in a charmingly lucid style. And finally, the conclusions reached are revolutionary; if accepted, the traditional interpretation of much of the contents of Leibniz's philosophy and the usual account of its evolution must be discarded.

The book originated in an attempt to make a study of Leibniz as a precursor of modern Symbolical Logic, to analyze his Logical Calculus and his Geometrical Calculus, and to reconstruct the conception of his Universal Characteristic. In carrying out this design, M. Couturat was led to examine the unpublished writings of Leibniz contained in the library at Hanover, being greatly aided in doing so by Herr Bodemann's catalogue. He found that the various editors of Leibniz's works, such as Raspe, Erdmann, and even Gerhardt, had particularly neglected in their editions the logical writings; that, for one manuscript on logic which they had published, they had left a score of

others, just as important and as finished, if not more so, unpublished; and, what is most remarkable, nearly all the dated manuscripts. M. Couturat's explanation of this astonishing fact is doubtless the true one, viz., that Leibniz's editors did not understand these fragments on logic and were unable to appreciate their value.

The revolutionary conclusion to which the author comes (pp. vii f.; 431 f.), the central and essential outcome of the work before us, is that above all things else and throughout his life Leibniz was a logician, and his logic was the real foundation of his whole system. His philosophy reposes solely upon the principles of his logic and proceeds entirely from them. His logic is at once the source, the center, and the connecting bond of his metaphysical speculations and of his mathematical discoveries. Both the Monadology and the Infinitesimal Calculus rest upon and flow from it. Thus, according to M. Couturat, Leibniz's logic was not only the heart and soul of his system, but the center of all his intellectual activity and the source of all his discoveries, "le foyer obscur, ou du moins caché, d'où jaillirent tant de lumineuses 'fulgurations'" (p. xii).

The work, however, is not a piece of special pleading; far otherwise. The revolutionary conclusion to which it comes as to the capital place which Leibniz's logic occupies in his system, was, we are told, neither sought by the author nor even foreseen by him; it was forced upon him almost in spite of himself. The calm and unprejudiced manner in which the body of the book is written fully bears out this statement. The work is characterized throughout by an absence of all apparent special pleading, and of any detailed criticism. It is preëminently, what its author calls it, a *purely historical work* (p. 431), a calm exposition of what he believes he finds in Leibniz's own writings, supported by copious references to, and quotations from, the unpublished manuscripts as well as from the published writings.

M. Couturat's book, however, apart from the importance of the conclusions to which it comes regarding the relation of Leibniz's logic to the rest of his system, is of great value on account of the full account it gives of Leibniz's various logical labors, of their historical development, and of their connection one with another. All students of Leibniz have known that he was interested, especially in his youth, in schemes for improving logic, and in schemes for a sort of universal language. Expositors and critics of his philosophy have, however, usually regarded schemes of the latter sort as quite visionary, and have given little attention to them. Credit has always, however, been given to Leibniz for a certain amount of valuable work in logic. The

law of sufficient reason; the criteria for determining the quality of terms — their clearness, distinctness, and adequacy; certain forms of immediate inference, such as the inversion of relations and inferences from added determinants; certain imperfectly understood suggestions toward a Symbolical Logic, and the like, have usually been given as the sum of his logical achievements. But it is safe to say that heretofore his real aims, the extent of his interests, and his actual achievements in logic have never been fully understood or properly appreciated. In M. Couturat's book we have the first adequate account of them. In spite of the fact that many of these labors were abortive, there is a large amount of successful work and a wealth of fruitful suggestion; and M. Couturat's book cannot fail to give one a fresh and vivid impression of Leibniz's genius and of his astonishing versatility.

In his first chapter, M. Couturat gives a brief account of Leibniz's views of the traditional logic of Aristotle and the Schoolmen, especially of the syllogism and of his suggestions towards its improvement. Attention is called at the outset to the well-known passage in the *Nouveaux essais* (IV, xvii, 4) in which Leibniz declares that the form of the syllogism is one of the most beautiful and most considerable discoveries of the human mind, and that it is a *sort of universal mathematics*. Leibniz, it is shown (p. 4), reduced propositions as to quantity from the traditional four to the now accepted two; he adopted (p. 8) the ingenious method, suggested by Ramus and Thomasius and now known as *reductio ad absurdum*, of re-reducing the modes of the last three figures to the first; he demonstrated (p. 49 f.) syllogistically subalternation and conversion; he vigorously defended the fourth figure against its critics; he anticipated (pp. 21, 25) Euler in the use of circles by which to represent the meaning of propositions, and also invented a more ingenious and more perfect linear symbolism. He appears, however, to have constantly oscillated between the intensive and the extensive interpretation of propositions, while showing a marked predilection, although apparently more instinctive than reasoned, for the former.

In Chapter II, we have an account of Leibniz's youthful production, published in his twentieth year (1666), *Dissertatio de arte combinatoria*, and of its relations to his later projects. In this essay Leibniz held (p. 49) that all complex concepts or ideas can be resolved into simple ones, by an analysis analogous to the resolution of numbers into their prime factors; and, conversely, that all complex ideas can be obtained and composed by the progressive combination of these simple ones. The simple concepts or ideas, the constitutive elements of all

the others, are few in number, and to each of them a name or sign should be assigned, and thus the *alphabet of human thoughts* would be formed. Here, according to M. Couturat (p. 431), we have the two fundamental postulates of Leibniz's logic, *viz.*: "(1) All our ideas are composed of a very small number of simple ideas, which together form the *alphabet of human thoughts*; (2) Complex ideas proceed from these simple ideas by a uniform and symmetrical combination analogous to arithmetical multiplication." Both of these postulates are declared (pp. 431, 432) by M. Couturat to be false; but nevertheless the importance of the *De arte combinatoria* in the evolution of Leibniz's thinking and in the formation of his logic can hardly be overestimated, for the Combinatoria translated the combinations of simple ideas by the help of the signs or characters which symbolize them; and thus we are led to construct a Universal Characteristic; and from that we are led to form a Symbolical Logic which will substitute for ideas the combination of signs or characters, for propositions the relations between these symbols, and for inference a sort of calculus, and thus furnish a universal and infallible method for demonstrating known propositions and for discovering from them new ones. Leibniz himself later refers to the *Combinatoria* as the prelude and the anticipation of his further discoveries; and he seems to have held to the end of his life that its basis was sound. M. Couturat finds (p. 49, note) among the unpublished manuscripts of Leibniz two later plans for a new *De arte combinatoria*, from which it appears that the conception in its details underwent considerable modification in the mind of Leibniz.

Chapter III deals with Leibniz's various projects for a universal spoken or written language, the form under which he at first conceived his Characteristic. He seems to have been quite familiar with the different contemporary projects of Becker, Kircher, and others. These projects hardly deserve to be called schemes for a universal language, resembling as they do more nearly modern diplomatic ciphers or telegraphic codes, and resting on no logical and philosophical basis. The ambiguity of terms, giving a term several meanings in each language; the lack of exact synonyms, rendering exact correspondence between the words of two languages impossible; the diversities of syntax, rendering literal translations often unintelligible, make these earlier projects impracticable. At the age of twenty, Leibniz conceived a plan of a universal language which should be truly philosophical and rest upon a logical basis; *viz.*, a complete analysis of concepts or ideas and their reduction to simple ones, each simple term to be represented by as natural and simple a sign or character as possible. In this way

Leibniz would form a sort of ideographic alphabet composed of as many symbols as there are elementary ideas. In a word, the scheme was for an *ideography*, rather than for a *stenography*. Stimulated more or less by the projects of Wilkins and Dalgarno, Leibniz labored to develop and to perfect his project. A *real* Characteristic is for him an *ideography*, that is, a system of signs immediately representing things (or rather ideas), and not words; so that the people of each nation could read them and translate them into their own language (p. 61). Leibniz came, however, to see that the problem was less simple than he had at first supposed; and, in prosecuting it further, he adopted an *a posteriori* method. He took the living languages as his point of departure, and by a logical analysis undertook to derive from them, on the one hand, the simple ideas, and, on the other hand, a rational or philosophical grammar. He began working on a rational grammar as early as April, 1678; and primarily applied it to the Latin as a basis or intermediary. All exceptions and inflections, and all distinctions of number and gender, were eliminated. He rejected the Aristotelian view that the office of the verb is to express time. He held that the noun expresses an idea; the verb a proposition (affirmation or negation). All speech is finally (p. 70) reduced to "the one noun *ens*, to the one verb *est*, to adjectives (expressing qualities), and to particles which serve to connect all the preceding words and to indicate their relations." He attempts even to carry further the analysis of particles (pp. 71 f.). These studies in comparative philology and grammatical analysis all had a logical aim. In the *Nouveaux essais* (III, vii, 6) he writes: "I truly believe that language is the best mirror of the human mind, and that an exact analysis of the meaning of words would reveal better than anything else the workings of the understanding." Such a grammatical analysis reveals primitive logical relations (p. 76) and enables us to demonstrate certain 'asyllogistic' inferences (p. 75), such as the inversion of relations, *e. g.*, Peter resembles Paul, therefore Paul resembles Peter. The ideal, indeed, of the universal language is to express concepts by characters which will make manifest both their composition *and their relations* (p. 75).

In order to constitute the *alphabet of human thoughts*, which is to serve as the basis of the universal language, there is need of an inventory of human knowledge, a demonstrative encyclopædia; and at the same time that our primitive concepts are enumerated and classed, they must be represented by appropriate characters, and signs must be invented to express their combinations and their relations — the work of the Universal Characteristic (p. 79). Thus the true universal, or

rather philosophical, language presupposes the Encyclopædia and the Characteristic; and these two must be elaborated together, for the one involves the other (p. 80). In considering them, however, we may begin with the Characteristic (Ch. IV).

Leibniz understands, as we have seen, by *real* characters, signs which directly represent, not words, letters, or syllables, but things, or rather ideas. Among these signs he recognizes an important difference; some represent ideas only, others assist in reasoning. Egyptian and Chinese hieroglyphics, and the astronomical and chemical symbols, are examples of the first class; arithmetical marks and algebraic signs, of the second. Characters of the latter sort — to aid reasoning — are what Leibniz wanted for his Characteristic. Hence he regarded arithmetic and algebra as samples of his Characteristic, and as proofs of its possibility and value. The capital advantage which he attributed to his Characteristic was that it would reduce all human reasoning to a sort of calculus (p. 84 n.), enabling us to reason by a calculus analogous to those of arithmetic and algebra. Mathematics owes its progress, according to Leibniz, to the fact that it possesses suitable symbols in its arithmetical and geometrical signs; and his own progress in mathematics he himself attributed to the fact that he had succeeded in finding appropriate symbols with which to represent quantities and their relations (p. 84). His discovery of the Infinitesimal Calculus grew out of his constant search for new symbolism (pp. 84, 87), and in turn contributed much to confirm him in his estimate of the great importance of a good characteristic for the deductive sciences (p. 84). The conditions of a good characteristic (pp. 87–89), if realized, would, he thinks, give us a logical calculus which would be superior to the Cartesian method, and would be the real geometrical method sought for in vain by Descartes and Spinoza. Among the many uses of the Characteristic, Leibniz boasts especially that it would put an end to disputes and the interminable discussions of the schools (p. 97); he speaks of it, in fact, as "un juge des controverses veritablement infallible" (p. 98 n.). To settle a question, philosophical or otherwise, or end a controversy, future disputants would only need to take their pens, call in a friend to act as umpire, and say 'Calculemus!' (p. 98). His Characteristic was to be applicable to all domains of knowledge, prevent error, discover truth, be the *organon* or instrument of reason, and, in fact, be an actual substitute for reasoning (p. 101). Leibniz by turns employed various schemes of symbols, arithmatical, algebraical, geometrical, and even mechanical. These he seems to have admitted as parallel and equivalent systems (p. 116).

In addition to the difficulty of settling upon a definitive symbolism, the realization of Leibniz's great project for the Universal Characteristic was retarded, he himself tells us, by the fact that it presupposed the elaboration of the Encyclopædia, or at least a collection of logical definitions of all the fundamental concepts of the different sciences (p. 117).

In Chapter V, we have an interesting account of the various projects for an Encyclopædia which Leibniz entertained during the course of his career, and of the reasons why his far-reaching enterprise failed of realization. This Encyclopædia was to have been Leibniz's great philosophical and scientific work. It was to have been (p. 119) "an abstract or summary of all human knowledge, historical and scientific, arranged in a logical order and following a demonstrative method, commencing with definitions of all the simple and primitive terms (those forming the *alphabet of human thoughts*)." As a result, all the sciences would assume the deductive type (pp. 152, 154), and all of them would rest upon a small number of principles or hypotheses (p. 152). They would also "be abridged in being augmented" (p. 152). The very earliest essays of Leibniz relating to this project for an encyclopædia reveal the fact that he was even then deeply interested in all orders of knowledge with a curiosity truly universal, and that he aimed to introduce into all the sciences, even the moral and practical sciences, the logical clearness and the demonstrative force which he thought he found in mathematics. At one time he plans to found a Bibliographical Review which should give an account of all new books; at another, he conceives of a sort of portable library, an *Opus Photianum* (p. 123), giving the substance of all literature; at another, he plans the correction and completion of the *Encyclopædia* of Alsted, which had appeared about 1671. In 1676 he aims to found a scientific society which should enlist men of learning generally in advancing the sciences; the outcome of their joint labors would be the Encyclopædia. An *Imperial German Society*, under the patronage of the Emperor, is also outlined (p. 127); and until the very end of his life Leibniz labored without ceasing on an astonishing number of similar projects (see the interesting Appendix IV, "Leibniz as Founder of Academies"), turning now to this, now to that sovereign, and to individual scholars and to the learned generally, for help in realizing them. And in all these projects he never lost sight of his scheme for the Encyclopædia. In this connection, also, he occupied himself throughout life in finding or collecting *definitions* of all sorts, attaching great value and logical importance to good definitions. He

speaks of having "quantité de définitions" (p. 169), especially in logic, in metaphysics, and in ethics. Numerous long tables of definitions, five of especial importance (p. 170), are found among his manuscripts.

This vast project of an Encyclopædia, cherished through a long life, was never realized. Leibnitz himself gives (p. 175) two reasons for this — lack of collaborators, and lack of time.

The elaboration of the Encyclopædia presupposes a *Scientia generalis*, that is to say, a universal method applicable to all the sciences. This general science, to which M. Couturat devotes over one hundred pages (Ch. VI), constituted the whole of Leibniz's logic. Logic, in the most comprehensive sense, consists, according to Leibniz, of two parts. The first is the art of judgment and proof, is the method of certainty, and serves to demonstrate truths already discovered and to verify doubtful or contested propositions. It proceeds from principles to consequences, from causes to effects; is progressive and synthetic. The second is the art of discovery; aims to discover new truths by a sure and nearly infallible method and in a systematic order. It proceeds from consequences to the principles required, from known effects to unknown causes; is regressive and analytic. The two parts thus resemble synthesis and analysis in geometry. Later, however, Leibniz came to see that analysis and synthesis are alike employed both in demonstration and in discovery and together form but one method. The real difference, therefore, between the two parts of logic is found rather in the purpose with which the one method is employed, and in the purely subjective fact that the truth to be established is in the one case known and in the other case unknown.'

The *Scientia generalis* is thus a generalization of the method of mathematics (p. 179). Analysis consists in decomposing all concepts into their simple elements by means of definition; synthesis consists in reconstructing them by means of the art of combination. Thus the *De arte combinatoria* is the germ and principle of this logic and furnishes the key to this double process of analysis and of synthesis. But fortunately analysis need not be carried on indefinitely; for "the analysis of a truth is finished when its demonstration is found, and it is not always necessary to finish the analysis of the subject or predicate of a proposition in order to find its demonstration" (p. 183).

At first Leibniz affirmed that demonstration is nothing but a chain of definitions. Hence all axioms ought to be demonstrable. But the certainty of axioms does not come from experience, for induction

could never justify a universal and necessary proposition (p. 185). Hence it rests upon the principle of identity or contradiction, the sole *a priori* principle that Leibniz recognizes. He boldly declares (p. 185) that all truths must be capable of demonstration, except *identical* propositions (those reducible to the principle of identity) and empirical propositions (those known by experience). All truths are first reduced to definitions, identical propositions, and empirical propositions; and finally to definitions and the principle of identity. All demonstration rests upon definitions and the axiom of identity (pp. 184 f., 203 f.).

The necessity belonging to axioms is found in the principle of contradiction or identity. The necessary is that whose contrary implies contradiction, "qui est verus atque unicus character impossibilitatis" (p. 187). Axioms are proved *by means* of definitions, but their truth does not rest upon the definitions but upon the principle of identity (p. 187). In contrast with the nominalism of Hobbes, Leibniz established a difference between nominal and real definitions which is of capital importance in his theory of knowledge. Only those definitions are *real* which make manifest the *possibility* of the thing defined, *i. e.*, the absence of all inner contradiction in the concept. Hence a real definition is not arbitrary (as with Hobbes), for it conforms to a true 'essence,' a possible 'nature' which does not depend upon us. Leibniz, therefore, rejects the scholastic rule for definition and substitutes for it one which may be formulated mathematically thus: "The definition ought to comprise the conditions necessary and sufficient to demonstrate all the properties of the object defined." This whole theory of definition starts from the *De arte combinatoria;* for to reach a perfect definition of a notion the analysis of the notion must be complete. When the notion has been resolved into its elements, the slightest contradiction becomes apparent and destroys the concept; hence an *adequate* notion is necessarily a true one, for all simple ideas are compatible among themselves. Leibniz's famous critique of the ontological argument, of so much consequence in his metaphysics, proceeds directly from these logical theories (pp. 195, 196, and note). His theory of definition is also of capital importance in his theory of knowledge, as expounded in his *Meditationes de cognitione, veritate, et ideis*, with its doctrine of clear, distinct, and adequate ideas. The complete analysis of truths and notions is indeed the ideal goal of science (p. 200). Its realization would establish the unity of science and furnish a rational basis and justification of the special sciences. The demonstration of axioms (other than the principle of identity)

would contribute to this end; but, more important still, it would contribute toward the completion of the analysis of ideas and the discovery of the truly primary notions needed for the composition of the *alphabet of human thoughts* (p. 200). The insufficiency of the Cartesian rules of method, according to Leibniz, is due to the fact that they are psychological precepts, not logical ones, and consequently have a subjective rather than an objective reference (p. 202). The sole remedy for our errors is to be found in a good logic.

As all demonstration consists in substituting the definition for the thing defined, that is to say, in replacing a complex term by its equivalent group of more simple terms, the essential basis of deduction is *the principle of the substitution of equivalents*. This, and not the *Dictum de omni et nullo* of Aristotle, is the supreme and only principle of logic. Thus Leibniz anticipated Jevons's doctrine, "*The Substitution of Similars the true Principle of Reasoning*" (p. 206).

Not only all necessary truths, but all propositions whatsoever are analytic. In every true proposition the predicate is contained in the subject (pp. 208 f., and notes). "In saying," wrote Leibniz in 1668, "that the notion of Adam contains all that will ever happen to him, I am saying only what all philosophers understand in saying *prædicatum inesse subjecto veræ propositionis*." "That logical thesis," declares M. Couturat (p. 209 n.), "is the foundation of the whole of Leibniz's metaphysics." But if all propositions are thus analytic, what becomes of Leibniz's distinction between truths of reason (necessary truths) and truths of fact (contingent truths)? Are not the latter just as necessary as the former? The answer which Leibniz makes is that truths of fact are probable only *for us*, and because of our incomplete and merely approximate knowledge; in themselves, like the truths of reason and on the same ground and in the same degree, they are absolutely certain, for like them they are analytic or virtually identical. Like them, too, they are evident *a priori*, at least to an infinite intelligence which can grasp all their constitutive conditions. Herein consists properly the *principle of sufficient reason*, which Leibniz seems to have stated as early as 1670 (p. 214). The exact logical meaning of that famous principle, ordinarily stated as "Nothing is or happens without a reason," is "All truths are analytic," or "In every true proposition the notion of the predicate is contained in that of the subject" (pp. 214, 215). The principle is thus the converse of the principle of identity: "The principle of identity affirms that every identical proposition is true; the principle of sufficient reason that every true proposition is analytic, that is, virtually identical" (p.

215). These two complementary principles are inseparable, and are equally valid for all sorts of truths, for "it may be said," Leibniz declares (p. 217), "in a way, that these two principles are contained in the definition of the True and the False." The principle of identity, however, may be regarded as applying more particularly to truths of reason, and the principle of sufficient reason as applying more particularly to truths of fact, which latter cannot be justified without it (p. 217).

The necessary for Leibniz being that the opposite of which involves a contradiction, there is for him no necessity but logical necessity, and no impossibility but the logically contradictory (p. 219). But although whatever is not in itself contradictory is possible, all possibles cannot be realized together, for they are not all *compossible*, *i. e.*, mutually compatible. "It is as yet unknown," he tells us (p. 219 n. 2), "whence the incompossibility of different things springs, or what can make different essences to be opposed to each other, since all purely positive terms seem to be compatible." According to M. Couturat (pp. 219 n. 2, 432), Leibniz's difficulty here is to be attributed to his failure to take due account of logical *negation*. The principle of contradiction, Leibniz tells us, is the law of possibility or essence; the principle of reason, or of "the best," is the law of compossibility or existence. The principle of reason, purely logical in origin, thus assumes a metaphysical and theological character; and, applied to causality, a cosmological character. It enables us to find in God the 'first' or 'ultimate reason' of things. The laws of nature are contingent propositions depending upon the principle of reason, the free choice by God of 'the best.' By the principle of reason, as is well known, Leibniz rehabilitated the use of the principle of finality in physics. And his famous axioms, which play such a rôle in his physics and metaphysics, such as the axiom of symmetry, the principle of economy, the principle of the identity of indiscernibles, and the law of continuity, are (pp. 227 f.) but special applications of the principle of reason. Leibniz energetically and persistently affirms the perfect and absolute intelligibility of the world. For him things are hung on principles and have a logic running through them, are permeated by a sort of divine mathematics (p. 227); and God is "*avant tout* le grand calculateur et l'éternel logicien" (p. 237). "Cum Deus calculat et cogitationem exercet, fit mundus" (p. 227 n. 2).

Leibniz persistently deplored the absence of a satisfactory logic of probability, and himself made some valuable contributions towards

its realization (pp. 248 f.). The theory of probability was regarded by Leibniz (p. 249) as the natural complement of the logic of certainty. It forms, indeed, the essential part of the logic of discovery; so much so that Leibniz in places substitutes the one for the other and gives as the two parts of logic the Logic of Certainty and the Logic of Probability, instead of the Logic of Certainty and the Logic of Discovery. The theory of probability plays an important rôle in the mathematical and rational sciences; but it is especially applicable to the natural and experimental sciences (p. 255), being their proper method. The sciences of nature deal with truths of fact, and the laws of nature are contingent truths. These truths and laws are known *a posteriori* and by experience. Two important truths of fact are the basal experiences, primitive data of consciousness, *I think*, and *I think different things*. They both testify to the actual existence of things: the first, as Descartes showed, reveals our own existence; the second, what Descartes failed to see, reveals the existence of an outer world (pp. 257, 258).

Leibniz's view of induction (pp. 261–271) is extremely interesting. Induction, as understood by empiricists, Leibniz condemns absolutely as insufficient and as even misleading (pp. 261, 262). It is unscientific and without logical value. In what, then, does the demonstration of a truth of fact, or of an empirical law, consist? It consists in deducing it from a more general hypothetical law, which may serve as the principle of other empirical laws; and in ascending thus progressively to laws more and more general, in such a way as to make all empirical laws depend upon the smallest possible number of principles or hypotheses. Thus the sciences of nature must be constructed upon the same deductive type as the rational sciences, and the method of the physical sciences be assimilated to that of mathematics; the only difference being that in the one case we proceed regressively and analytically, and in the other progressively and synthetically (pp. 264, 265). In fine, abstract mathematics is the true logic of the natural sciences, and the only experimental method is deduction, direct or inverse (p. 271).

An hypothesis is the more probable, according to Leibniz, (1) the more simple it is; (2) the greater the number of phenomena it explains with the smallest number of assumptions; and (3) the more insight it gives us into new phenomena and the better it explains new experiences. The world of phenomena is a great cryptogram, the keys to which are the laws of nature; such a law becomes more probable the greater the number of words and phrases it enables us to de-

cipher. Thus the experimental sciences employ deduction in its two forms, the logic of certainty and the logic of probability, or the Characteristic and the Calculus of Probabilities, which latter is the true inductive method (p. 274).

In Chapter VII, M. Couturat seeks to determine Leibniz's conception of universal mathematics and the relation which logic and mathematics held in his thought. Mathematics served Leibniz as the model for his logic and was its inspiration. Mathematics, as traditionally conceived, has as its subject-matter magnitude and number. Mathematics, as conceived by Leibniz, has for its subject-matter not only number and magnitude, but whatever in the domain of sensible intuition is susceptible of exact and precise determination; it is, according to his expression, the *logic of the imagination*. Now the objects of the imagination are quality (or form) as well as magnitude; as to magnitude, things are equal or unequal; as to quality, they are like or unlike. The consideration of likeness, then, is as general and as fundamental as that of equality and belongs as essentially to universal mathematics. Consequently universal mathematics embraces two principal branches. The one is the science of magnitude (or equality) and its relations and proportions; that is, the traditional mathematics, summed up in logistic. The other is the science of forms (or of likeness), of order and of position; that is, the Combinatoria (pp. 290, 291). Mathematics in the traditional sense, *i. e.*, logistic or mathematical analysis, is subordinate to the Combinatoria, and the latter to logic itself (p. 299). Leibniz, therefore, long before modern discoveries and progress had revealed the fact, perceived that there is a universal mathematics, from which all the special mathematical sciences derive their most general principles and theorems, and that this universal mathematics is identical with logic itself, or at least is an integral part of it (p. 317). Universal mathematics is then the general science of relations (p. 317); but as a true formal logic is the science of all the general laws and forms of thought, the two coincide. Thus Leibniz conceived his logic as a mathematics of thought, or, as he expressed it, a "Universal Algebra"; something which has been realized by Whitehead in his *Treatise on Universal Algebra* (pp. 319, 320).

Side by side with the traditional algebra, which is nothing but the logic of number and magnitude, based on the single relation of equality, Leibniz conceived other algebras based on relations of congruence, similarity, etc. M. Couturat points out (p. 437) that Leibniz had "all the elements, or at least the materials of a Logic of

Relatives"; and that (p. 303) he may justly be considered as the precursor of the Logic of Relatives as developed in more recent times by De Morgan, C. S. Peirce, and Schröder.

Of all the theoretically possible algebras included in universal mathematics, Leibniz attempted to elaborate but two: the logical calculus, which consists in the theory of identity and inclusion, and is applicable to both logic and geometry; and a geometrical calculus, immediately applicable to the study of spatial relations and embracing principally the theories of congruence and likeness (p. 321). Both proceed from the idea of the characteristic and are but two applications of it (p. 321).

In Chapter VIII, M. Couturat gives us an extremely interesting account of Leibniz's various labors in the province of symbolic logic (the logical calculus or algebra of logic). He shows that Leibniz occupied himself with this subject principally at three periods, 1679, 1686, 1690; from each of which we have a series of essays which taken together show that Leibniz was in possession of nearly all of the principles of the Algebra of Logic of Boole, Peirce, and Schröder, and on certain points was in advance of Boole himself (p. 386). He formulated the law, not only like Boole for logical multiplication, but also like Jevons for logical addition (p. 344). The important idea which constitutes perhaps Boole's finest discovery, Leibniz had clearly grasped as early as 1686; viz., the perfect analogy between categorical propositions and hypothetical ones, or, as Leibniz said, between incomplex terms and complex ones, that is, between concepts and propositions (p. 354). Leibniz had a more or less accurate idea not only of logical multiplication, addition, and negation, but also of logical subtraction and division. He knew the fundamental relations of the two copulas. He had found the true algebraical expression of the four classical propositions under their two principal forms. He had discovered the principal laws of the logical calculus, notably the rules of composition and of decomposition. Finally, he had a very clear conception of the double interpretation of which the logical calculus is susceptible, according as the terms represent concepts or propositions (p. 386). Why then, it may be asked, did Leibniz not succeed in definitively constructing the Algebra of Logic? M. Couturat finds the answer in Leibniz's preference for the intensive rather than the extensive view (pp. 386, 387), while the Algebra of Logic can only be based on the latter. That Leibniz failed to see this is, he thinks (p. 362), astonishing; for Leibniz clearly comprehended the difference between the two views, and, in a fragment of 1690,

accurately defined and contrasted them, and even enunciated the law according to which extension varies inversely with intension (p. 362).

The final chapter (IX) deals with Leibniz's geometrical calculus, in which he attempts to free geometry from the consideration of magnitude, and, by an analysis of position (*Analysis situs*), express position directly (pp. 406, 427). What he succeeded in producing, however, was but a system of bipolar and tripolar coördinates (p. 428); and his lack of success was due to his failure to free himself from metrical considerations (pp. 412, 428, 438). That his idea of the geometrical calculus was, nevertheless, neither chimerical nor sterile, as so many philosophers and mathematicians have held, is shown, M. Couturat thinks, by the fact that Grassmann in his *Ausdehnungslehre* (1844) has successfully built upon Leibniz's foundations. As Boole rediscovered and realized one part, so Grassmann did another part of Leibniz's Universal Characteristic, and the two have revealed the fact that Leibniz's most daring conceptions were no idle dreams, but prophetic intuitions, anticipating by nearly two centuries the progress of science and of the human mind.

The brief Conclusion (pp. 431–441) brings together the more important intrinsic difficulties and defects in Leibniz's logical labors, which the exposition in the body of the book reveals, and declares that, however powerful and original Leibniz's mind may have been, he was in no sense the *autodidact* that he boasted of being; and that his great erudition and his reverence for the authority of Aristotle in logic and Euclid in mathematics, from whose influence he never fully freed himself, were the fundamental causes of his failure successfully to perfect himself in his logical calculus and his geometrical calculus. "It will never," remarks M. Couturat (p. 440), "be known how much such overperfect works as Aristotle's *Organon* and Euclid's *Elements* have cost the human mind, nor how many centuries they have retarded the progress of the sciences by discouraging innovators through their appearance of definitiveness."

This is not the place to discuss the merits of Leibniz's logical labors. As for M. Couturat's work, the scholarship and temper displayed throughout this book are worthy of the highest admiration; in these respects, it is a model of what such a book should be. Furthermore, the book is a contribution of the very greatest importance toward the correct understanding and the evaluation of Leibniz's philosophy. Certain it is that no one hereafter who undertakes to discuss the philosophy of Leibniz can ignore it. M. Couturat has conclusively proved that Leibniz's logical labors were far more extensive and in-

trinsically significant, and far more influential in shaping Leibniz's thought as a philosopher, mathematician, and theologian than has been hitherto realized; and he has given us a most full and able account of what these labors were in all their aspects. While greatly impressed with the strength of the evidence which the book also presents in support of the conclusion that Leibniz's logic was the real foundation and center of his whole system, the present reviewer is not prepared, without further investigation and an examination of the logical writings of Leibniz, published by M. Couturat since the appearance of this book, to regard that conclusion as fully established. In the case of a universal genius like Leibniz, it is easy to make out a strong case for this or that interest as being primary and central; for example, it would not be difficult to make out a plausible case (cf. p. 165, n. 2) in support of the view that Leibniz was primarily a theologian and that his logical and his mathematical labors alike were but auxiliary to his theology. This is said not to disparage the evidence adduced by M. Couturat in support of his revolutionary conclusion, but to lead to its being soberly weighed.

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Mind in Evolution. By L. T. HOBHOUSE. London, Macmillan & Co.; New York, The Macmillan Co., 1901.—pp. xv, 415.

The book has several claims to consideration: first, it is a fairly comprehensive review of the literature and status of comparative psychology. Mr. Hobhouse has made use of many authorities—even the most recent. Yet there are very singular omissions: for example, it is singular that James's name should not occur in a book which discusses instinct, habit, the limits and methods of acquisition, etc.

Second, it contains new experimental and critical matter. Mr. Hobhouse has endeavored to conduct experiments on animals (including monkeys) under conditions which more nearly fulfill the normal ones than many heretofore carried out (*e. g.*, Thorndike's). In this he is fairly successful, and his effective criticism of Thorndike, for example, is supported by experimental results. At the same time, the 'naturalness' of the conditions is certain to be criticised by the extreme advocates of exactness. The present reviewer's opinion, however, is on the side of Hobhouse and Mills — that artificiality in such experiments is the extreme to be avoided. Better 'natural history' observation in such a complex thing as an animal's learning processes, than an artificial exactness which paralyzes the learning process or ren-

ders it to any extent incompetent; for that is just the matter to be interpreted — the relative normal "incompetence" of the creature in comparison with man. Certain positive results of Mr. Hobhouse's investigations are noted below.

Third, the author discusses evolution. This is the least valuable feature — except the next noted — of the book. The attempt to construe evolution under general descriptive formulations is bound to be merely verbal, as Mr. Spencer demonstrated long ago. Such formulations are interesting from the point of view of general philosophy — as, for example, Mr. Spencer's definition of life. Mr. Hobhouse's formulation is thus interesting. It emphasizes the gradually increasing dominance of mind in evolution. But, except in so far as it aids in the further interpretation of facts — and it is hard to see how it can — the interest terminates there. Furthermore, it shows the dominance of the philosophical preconception of Mr. Hobhouse in the way indicated in the next paragraph.

Fourth, mental development (and evolution) is construed under a logical formula or analogy. An implicit inferential process is discovered in the simplest mental functions — especially those of adjustment and accommodation — and mental progress is looked for and recognized as the development of such assumed process into explicit logical function. All this is to the writer so much confusion, psychologist's fallacy, and irrelevancy. It is hard to see the motive for it, except the interests of an idealistic epistemology. It is further a distinct confusion of the psychic (agent's) and objective (spectator's) points of view. The book would be greatly strengthened as a contribution to scientific psychology were this strain of logicism expunged.

So far the general features of Mr. Hobhouse's book; for details the reader may consult discussions of it which have already appeared (*e. g.* in the *Psychological Review*, 1902, p. 508). As to the net result, the present writer is interested in the following:

1. The theory of what Mr. Hobhouse calls "practical judgment" in animals, and his evidence in support of it. By "practical judgment" he means a stage in the animal's accomplishment at which he seems to be able to use items of earlier experience somewhat out of their original setting, for practical purposes, that is, for the purpose of relatively new adjustments.[1] I think he is fairly successful in establishing such a function. It indicates — if finally made out — a stage in the growth of experience between association proper and the use of

[1] Thus stated in my own words; I find Mr. Hobhouse's many versions of it not entirely consistent with one another, nor always clear.

'generals,' inasmuch as it allows the play of relatively 'free' ideas in the realm of action.

2. The outcome in the matter of animal imitation. Here the extreme negative conclusions of Thorndike are fairly overthrown. It is shown, I think conclusively, that animals do imitate one another; the question being only when and where. I think it is a fair interpretation of Hobhouse's observations, taken with earlier ones, to say that such imitations are *mainly*, at any rate, and below the monkeys, in the line of the normal activities of the species; and that in all other cases of imitative acquisition the function is along the line of somewhat facile or already partially acquired function. This is consistent with the principle of "kinesthetic equivalents" now pretty well established for action in general. Even the human imitator can only do imitatively *things that he can do* — that is, for which he has some kinesthetic equivalents derived from former action.[1]

There are many other points of interest which it would be profitable to discuss. On the whole, it is safe to say that Mr. Hobhouse has produced an interesting and valuable book on comparative psychology.

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Agnosticism. By ROBERT FLINT. New York, Charles Scribner's Sons, 1903. — pp. xviii, 664.

Professor Flint of Edinburgh has written so much on matters connected with Natural Theology, and his work has been so widely read and commented on, that one cannot expect a book from his pen to bring to the fore any philosophical or theological views with which his readers are not already familiar. What he writes always shows range of reading, historical perspective, deliberate judgment, and an unusual familiarity with French literature, which in the matter of his last work stands him in especially good stead. He has, moreover, a way of selecting illustrative material from comparatively unknown authors which is saved from pedantry by its fine appositeness, and which serves to both clarify his theme and inform his reader. Then, too, he knows how to write English that can be understood, and his views are frankly expressed. These characteristics, together with his common sense Scotch philosophy, have secured him a wide audience, and they are all manifest in his latest work on Agnosticism.

Still, the book will not be read as it would have been a quarter of

[1] Cf. Bair's research on the acquisition of the power to move the ear, *Psych. Review*, 1901, 474.

a century ago. It is characteristically a nineteenth century work. Writers of current literature are quite right in insisting that the turn of the century meant more than buying a new desk calendar. There is a mood of thought in theology, philosophy, natural science, that the new century has already stamped as its own. Men may not be very sure just what it is, but they are certain that it is not the thought of yesterday; and they are right. Reading this book in the dawn of the twentieth century, instead of the evening of the nineteenth, things appear somehow out of perspective. The shadows are on the wrong side of the trees and the sunlight touches the twigs that ought to be in the shade. In fact, it almost convinces one that Darwin was wrong and that species are immutable. The book represents that peculiar British temper which, possessed by both parties to the dispute, made possible in England, as in no other land, a Deistic controversy and an Agnostic debate, and at the same time made it certain how both would eventuate.

It is the spirit of Locke speaking. Not Locke's sensationalism; but his insistency on the necessity of the intellectual basis of religion. When Dr. Flint says, in respect to religious belief, "evidence should be the measure of assent. Assent should be in proportion to evidence" (p. 513), he is enunciating the common platform of the Deist of the eighteenth century and the natural theologian of the nineteenth. It is the temper of Locke, too, that appears in the author's fair, candid, self-respecting treatment of his adversaries no less than in his restrained positiveness and acute clarity in supporting his own views. If it had been published when it was first projected, the book would have proved largely serviceable to both philosophy and theology. For here is a man who can hold that there is truth in Agnosticism, but who can at the same time make it perfectly clear that Agnosticism is not true.

The main contention of Dr. Flint is the perfectly sound one that, as a philosophy, Agnosticism can be made to work only by a suicidal inconsistency. Or, to use the author's felicitous phrase, it is a "scepticism mitigated by dogmatism." Now this criticism of Agnosticism holds unquestionably. In the specialized form in which Dr. Flint presents it, it lacks timeliness. It was a number of years ago when President Schurman observed that the farce of nescience playing at omniscience was about played out; and it is just as true when Professor Flint characterizes the same philosophy as "a kind of omniscient nescience": the only trouble is, it is a bit late. Such criticism seems ungracious, especially in view of the fact that there is room

in our literature for a critical and historical treatise on Agnosticism from the author's philosophical point of view, which should be standard for reference. Such this book of Dr. Flint's might have been, and is not. It is rather a sort of posthumous product of the debate than an historico-critical evaluation of the philosophical system discussed. This is the more the pity, for the author's scholarship, temper, and acumen fit him for the larger task. In fact, the book seems less like a unified whole than like the effort of a trained writer to edit his own literary remains. There is no dearth of excellent material, there is an abundance, not to say a surfeit, of just criticism of particular authors, there is much of sagacious well-turned observation. It would be difficult to find a shrewder estimate of the popular deification of Science, spelled with a very large capital letter, than is given by the author when he says: Physical science "is spoken of as if it were alone science, and as if there were hardly any other knowledge properly so called. That is to ascribe to it a most exaggerated value and authority, and should be treated as what it is, a mischievous modern form of superstition" (p. 342). But the trouble with the book is that it is put together with a soldering iron instead of a welding hammer.

The main outline of the book is excellent — Introduction, definitions, history, classification of forms of Agnosticism, discussion of successive forms; but the arrangement of matter under the divisions is disproportionate, often repetitious, and sometimes almost contradictory. To cite only a couple of instances. Under the general head of "History of Agnosticism," about twelve pages are devoted to a critical history of Post-Socratic and Roman Agnosticism, and two hundred pages later, under the head of "Mitigated Agnosticism," as many pages are devoted to Pyrrhonism; and the discussion is presented in substantially the same historic spirit as in the earlier treatment. Similarly we find substantially the same phases of Hume's philosophy treated in the same spirit in a number of different places. Again, in respect to classification of Agnosticism, Dr. Flint seems to have wavered in position. The criticism here is not as to the abstract excellence of the classification employed so much as to the author's consistency in the use of that adopted. On page 243 we read: "For the ends which the present writer has in view the most suitable classification of the incomplete or partial forms of Agnosticism will be into non-religious, anti-religious, and religious. It is chiefly with anti-religious and religious agnosticism that he is in this work concerned. On non-religious partial agnosticism it will be unnecessary for him to say more than suffices to indicate its bearings on the agnosticism

which deals adversely or favourably with religion." On page 310 he makes a more formal classification of Agnosticism into (*A*) Agnosticism having special reference to religion, which he subdivides into two kinds — that supporting and that opposing religion; and (*B*) Agnosticism having no special reference to religion. Division 4 under this latter head is "Agnosticism as to Ultimate Objects of Knowledge," the third of which is God. The introductory sentence to the chapter on "Agnosticism as to Religion" reads as follows: "It is now necessary to treat exclusively of the agnosticism which has a direct and special reference to the third great ultimate object of human thought, namely, God." This, in accordance with the above classification, makes the discussion of agnosticism as to religion an elaboration of one division of what he has denominated Agnosticism having no special reference to religion.

The main trend of Dr. Flint's thought is much more consistent than his classification. Holding that the intellectual ascent to theism is an essential element of religion, or at least of Christianity, agnosticism as to God could not be non-religious; it must be anti-religious. The confusion in presentation arises presumably from his writing his chapter on classification with one purpose and his chapter on agnosticism in religion with another, and then soldering them together without waiting to bring them into consistency.

Defects of this kind are of wearisome frequency throughout the book. They are probably to be explained by a glance at the palæontology of the volume. As long ago as 1879 the author wrote in the preface to his *Anti-theistic Theories* that he had "long cherished the hope of publishing a work on agnosticism." Eight years later his occupancy of the Croall Lectureship provided him with the opportunity of so doing. Possibly it was the psychological effect of "hope long deferred" that made him postpone for fifteen years longer the publication of these lectures. It appears as if the author, in the meantime, had not abandoned his purpose, and had written from time to time, under the stimulus of fresh literature, such observations as came to him on the general theme. Finally, the lectures and this new material were brought together by a process of agglutination, an extract from his article on "Theism" in the Britannica was tacked on, and the whole put between covers to constitute the volume under review. If a full index and a considerable bibliography had been added, they would have done much to redeem the book; but as it is, the chief feeling it arouses is one of regret that it is not what it could have been, and should have been.

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SUMMARIES OF ARTICLES.

[ABBREVIATIONS.—*Am. J. Ps.* = *American Journal of Psychology*; *Ar. f. G. Ph.* = *Archiv für Geschichte der Philosophie*; *Int. J. E.* = *International Journal of Ethics*; *Rev. Ph.* = *Revue Philosophique*; *R. I. d. Fil.* = *Rivista Italiana di Filosofia*; *V. f. w. Ph.* = *Vierteljahrsschrift für wissenschaftliche Philosophie*; *Z. f. Ph.* = *Zeitschrift für Philosophie und philosophische Kritik*; *Z. f. Ps. u. Phys. d. Sinn.* = *Zeitschrift für Psychologie und Physiologie der Sinnesorgane*; *Phil. Jahr.* = *Philosophisches Jahrbuch*; *Rev. de Mét.* = *Revue de Métaphysique et de Morale*; *Ar. f. sys. Ph.* = *Archiv für systematische Philosophie*.—Other titles are self-explanatory.]

LOGIC AND METAPHYSICS.

Gehirn und Seele. PAUL SCHULTZ. Z. f. Ps. u. Phys. d. Sinn., XXXII, 3–4, pp. 200–259.

The author's standpoint is that of transcendental idealism. His object is to consider, from the Kantian point of view, the relation of brain to consciousness, or the relation of matter to mind. The problem reduces to the relation of the two modes of the mind's perceiving. What are called objects or things in the world, are perceptions in space and time. But space and time are forms of perception of the mind; therefore, objects and things share in the subjectivity of space and time. Consciousness is also conscious of itself; but this knowledge is not objectified. However, it is not more subjective than the knowledge of things. The problem of the relation of mind to matter, therefore, becomes the problem of the relation of these two kinds of knowledge. Science has to do with objects; objects reduce to matter, matter to motion, motion to energy, and energy to the laws of inertia. But the mechanical ideal of science obtains only in the inorganic world. Once in the organic world, a new concept must be introduced, namely, purpose. The principle of purpose is a peculiarity of our consciousness, just as are the forms of perception, space and time, or the categories of the understanding. It is *a priori* given, and, in so far as it is the presupposition and condition of science, it is transcendental.

H. C. STEVENS.

La notion idéaliste de l'experience. L. WEBER. Rev. de Mét., XI, 2, pp. 139–165.

From the point of view of metaphysics, physics postulates the possibility of experience as understood by the realist and dualist, a postulate the examination of which falls outside the science based upon it. Kant was the first to bring this postulate to light, and to interpret it by the method which

he had applied to the problem of the possibility of an *a priori* science of mathematics. The Kantian conception of experience provokes the same objection as the correlated conception of mathematics. The dualism from which it proceeds it sometimes affirms, sometimes disavows. Critical idealism explains the relation of phenomenon to subject, but is far from clear as to the relation of the phenomenon to its absolute object. There is an implied contradiction between the transcendent relation of the thing-in-itself to the phenomenon, and the transcendental connection of phenomenon and knowing subject. Elaborated at a time when mathematics was regarded by philosophers as the type of perfect science, the psychology of the Critique of Reason is inadequate to the continuity, flexibility, variability, and actual and potential infinity of the living intelligence. The Kantian theory is accordingly unable to give answers to the questions which arise as physics advances. It is unable to say whence comes the diversity of the descriptive symbols of physics, or what relation these symbols bear to reality. But can these questions be answered by a psychology which has more regard to the complexity of its subject? In every psychology of physics, there is a superimposing of a realism of mind and matter, and a consequent admission that it does not stand face to face with ultimate reality. From this it is clear that psychology is powerless to solve the problem which physics by its very existence lays down. The physicist has not to concern himself with the question of the possibility of experience. The psychologist, on the other hand, must demonstrate what the physicist takes for granted, namely, that there is possible a harmonious coöperation between the physical and the psychical, or that mind is so constituted as to know truth. But where, outside of physical experience, shall we find the guarantee of this harmony of mind and things? Experience is unable to decide between the physicist's belief that his ideas and symbols constitute reality and the reflective belief of the psychologist, because both the realism of the physicist and the idealism of the psychologist are statements and not explanations of experience. What for the physicist is indubitably real and radically distinct from the activity of thought, is for the psychologist only the ideal texture with which the activity of thought clothes the real. But if the psychological reality which reflection substitutes for the physical reality is not reduced to the thing-in-itself, unknowable and contradictory, it becomes one with the intelligible appearance; it is but the beginning of being, so that what is gained on the one side is lost on the other, and in both cases experience remains a primary and irreducible given. Each interpretation is valuable in its own domain; and if a philosophy embracing both physics and physiology in a single act of reflection is more than a vain hope, the antinomy pointed out above ought to be soluble. It is so in fact, on condition that we do not stop with a negation of physical realism, but go on to deny psychological realism, which the idealistic theories of experience have preserved for purposes of explanation.

M. S. MACDONALD.

Le 'second principe' de la thermodynamique. J. PERRIN. Rév. de Mét., XI, pp. 166–205.

This paper aims at showing that the second principle of thermodynamics is suggested by comparatively familiar observations, and can be expressed in language which is not at all mysterious. After an introduction dealing with the manner in which the diverse elements of the universe interact, and with the concepts of work, heat, and reversible transformations, the second principle is enunciated as follows: When a change can be isolated, the inverse change cannot; or, an isolated change never passes twice into the same state. This is called the principle of evolution, because it affirms a necessary order in the causal series, without the possibility of a return to the state already passed through. A discussion of objections suggested by reversible transformations and periodic oscillations leads to the following slightly modified form of the enunciation given above: It is highly improbable that an isolated system passes twice into the same state; and the improbability is greater the greater the complexity of the system. The remaining part of the paper is devoted to establishing the following deductions from the first and second principles of thermodynamics: (1) An isolated change cannot be reduced to the raising of a weight or the cooling of a thermostat. (2) It is impossible to construct a machine which shall use only one source of heat. (3) The heat liberated along a monothermous cycle is necessarily positive, and the labor supplied is necessarily negative. (4) When a monothermous cycle is approximately reversible, the external labor and the liberated heat approach zero. (5) One cannot, without the expenditure of work, effect the passage of the heat of a cold body to a warm body. (6) Two temperatures being given, the relation Q/q of the heat given up to two sources having these temperatures has an absolutely fixed value, independent of the cycle chosen.

M. S. MACDONALD.

What is Life? JUSTUS GAULE. Am. J. Ps., XIV, 1, pp. 1–10.

This article is a protest against the prevailing tendency to regard the body as analogous to a machine. This is a total misconception, because the structure of the machine remains always the same, while the structure of the body is continually changing. Moreover, the body is not to be regarded as a mere 'Zellen Staat,' in which cells exist in a state of independence. Every cell is dependent upon the products of other cells for its building materials. Life is a continual change of the organism, that is influenced, indeed, by its surroundings, but is not directly called forth by them. Examination of frogs, rabbits, and other animals shows that their organs follow a law of periodicity; in some definite period each organ has its maximum and minimum state, a state in which it is developed at the expense of other organs, and a state in which it contributes to the development of other organs. Thus the organism is continually adjusting itself to the great cosmic governing forces of the world. Like a crest on this great

wave of change, it is a smaller wave of variation by which the organism adjusts itself to environment. For example, a sudden change of altitude causes a corresponding change in the number and condition of the blood corpuscles. All these changes show that the problem to be studied in the organism is always a change of structure; in the machine, on the other hand, the change consists in the development of power while the structure remains the same.

GEORGE H. SABINE.

Personal Idealism and Its Ethical Bearings. G. H. HOWISON. Int. J. E., XIII, 4, pp. 445–458.

The writer, by exposing the inadequacies of all other current philosophies, suggests the moral need for his system of Personal Idealism. The external world is a world of minds, human and divine. The difference between these lies in the possession by the former of a sensuous consciousness, rising everlastingly, through a serial being in time and space, toward the divine mind, their eternal and essential ideal, in striving after which they seek to harmonize the rational and sensuous parts of their nature. Human minds, which are non-derivative, self-active, and determining, coëxist in a mutual recognition, essential to them, and constitute the only truly moral order possible. God is the absolutely realized perfection of personality, both the logical ground of existence and its ideal goal. He is not an efficient but a final cause, and so is responsible for the good in the world but not the evil, which results from the failure of human beings to determine their wills by reason. Thus creation and regeneration are valid terms, but only in the sense of final causation. With reference to creationism, historic philosophies fall into four groups: (1) those which directly express, or are unconsciously influenced by post-exilic Hebraism, (2) pantheistic emanationism, (3) materialism, and (4) positivism. The third and fourth groups, confessedly necessarian, afford no basis for individual freedom and deny the existence of the problem of evil. The second swallows up individual activity in that of the monistic whole, which thus becomes the source of wrong-doing. The first is unavoidably deterministic, through its postulate of beings who register the will and plan of a literal creator, the acknowledged author of evil. As opposed to these systems, Personal Idealism establishes the reality of moral freedom and solves the enigma of evil. It shows the socially objective nature of the self-active consciousness, and the validity of the belief in God. It offers the hope of the steady improvement of this world by our moral endeavor, and proves that fulfilled freedom depends upon the immortality of the individual, in the sense of the everlastingness of his process of experience. The writer's postulate of deity and denial of divinity to all other minds, differentiate his idealism from Davidson's *apeirotheism*, with which it is otherwise in agreement.

A. D. MONTGOMERY.

The Ethical Basis of Metaphysics. F. C. S. SCHILLER. Int. J. E., XIII, 4, pp. 431–445.

The metaphysical assumption of the Absolute is the death blow of ethics. For a transcendent Whole, which swallows up moral distinctions as partial and relative, deprives human conduct of its significance. The antithesis of this immoralistic position is found in Professor James's 'Pragmatism,' which is based on a teleological psychology. Thought, instead of being isolated from, and exalted at the expense of, action, is treated as a mode of conduct, and practical results as essential determinants of theoretic truth. The purposive character of mental life influences our most remotely cognitive activities. And since the most theoretical cognition has thus a practical value, it is potentially a moral act, a source of responsibility. The pragmatic assertion of the intellectual right to decide between alternative views by emotional and practical as well as by intellectual considerations, instead of favoring Irrationalism as opposed to Intellectualism, really resolves the conflict between the two. Reason is humanized and faith rationalized by showing their common root — practical value. A 'pure' reason, not developed from its practical use in the struggle for existence, would be a failure of adaptation soon eliminated by natural selection. The principle that purpose and interest are the motive power of knowing has an important bearing upon the ultimate question of metaphysics: What can I know as real? Reality and the knowledge of it essentially presuppose a definitely directed effort to know, the effort being inspired by the idea of some good at which it aims. Thus both the metaphysical concept of 'real' and the logical concept of 'true' contain a reference to the ethical concept of 'good': the question of value is raised whenever the questions of fact and of knowledge are raised. If, then, there is no knowing without valuing, Lotze is right, and the foundations of metaphysics really lie in ethics. Since our own activity is the necessary revealer of reality, fatalism and the naturalistic view of an indifferent universe are untenable. Nature must in some way respond to us. This reference to self, and the fact that all our other relations with responsive beings are personal, call for an anthropomorphic treatment of experience. Our metaphysics must be *quasi ethical.*

A. D. MONTGOMERY.

On Preserving Appearances. F. C. S. SCHILLER. Mind, 47, pp. 341–354.

It is here proposed to examine and put on a different footing the familiar antithesis between 'appearance' and 'reality,' which, since the work of Bradley, has become the too easy solution of philosophical difficulties. I. It is first urged that the ultimateness of B's absolute criterion, used to convict the whole universe of self-contradiction, is too readily assumed. The very existence of reality proves that seeming contradictions belong not to it, but to our thought. Hence we must assume an ultimate harmony, which can be attained only by taking into account the whole of experience.

It is this principle of harmony of which the absolute criterion is really a postulate. II. The true relation of reality to appearance arises within experience, and is not to be discovered by a denial of their continuity. The higher and more ultimate 'reality' can be reached only by acceptance of, and constant reference to, the lower reality of immediate experience. It is because this is incomplete in and for itself, that the higher realities are demanded to satisfy and harmonize its discrepancies. Thus the phenomena of science demand hypotheses, which become more real than the phenomena in proportion as they satisfy and make them intelligible. By this same process we reach the conception of an Ultimate Reality, which harmonizes the conflicting groups of higher realities demanded by different phases of experience. III. In the effort to obtain this, we must observe certain principles. (1) The Ultimate Reality must be a real and not a transcendent explanation. (2) The 'appearances' must be really preserved. (3) Immediate experience is more directly real than its explanation. (4) An assumed reality is true only so far as adequate to harmonize the lower. (5) Ultimate Reality can be accepted only if absolutely satisfactory to the whole of experience. This means not only that it must be so conceived, but that it must actually establish perfect harmony, and thus unite 'appearance' and 'reality.'

GRACE MEAD ANDRUS.

PSYCHOLOGY.

The Simplicity of Color Tones. I. M. BENTLEY. Am. J. Ps., XIV, 1, pp. 92–95.

The existence of composite colors has long been a matter of dispute. Examination of a general system of color tones shows four distinct continua, R to Y, Y to G, G to B, and B to R. These continua are perfect qualitative series, and hence all their members are equally simple, though it must be conceded that there are four types of qualities corresponding to the termini of the four continua (R, Y, G, B). This fact raises the question of the criterion for elementariness. It may be either psychological or psychophysical. The psychological criterion is the more satisfactory for psychology, and consists in analyzing introspectively as long as one can think a quality or group of qualities as existing apart from its context. According to this criterion, each color tone is undoubtedly simple.

GEORGE H. SABINE.

La négation: étude de psychologie pathologique. G.-L. DUPRAT. Rev. Ph., XXVIII, 5, pp. 498–507.

Is negation something positive, and are its mechanism and its principle other than those of affirmation? This question the author answers in the affirmative by appeal to mental pathology. We find cases of mental derangement where there is a propensity toward volition, refusal, or objection to any new suggestion. The subject, for instance, believes that he pos-

sesses no organism or organic needs, and refuses to supply such needs. Nolition, then, has a positive character. As nolition implies opposition against an action, negation implies opposition to an affirmation. The latter is a rejection of the content of objective thought, truth in general. In its operation, it does more than affirm a proposed synthesis to be false. It places an obstacle against the universality of a formula or idea. It is nolition especially concerning the establishment of truth or objective thought. Pathological observation shows that the 'insanity of doubt,' a morbid exaggeration of normal doubt, intermediary between affirmation and negation, corresponds to abulia, exaggerated deliberation intermediary between volition and nolition. As repulsion is a phenomenon which prohibits appetition, so negation is a positive fact which disputes in reality, efficacy, and importance, an affirmation. The former takes the point of view of action; the latter that of intelligence.

C. A. HEBB.

Die Bedeutung der niederen Empfindungen für die ästhetische Einfühlung. JOHANNES VOLKELT. Z. f. Ps. u. Phys. d. Sinn., XXXII, 1, pp. 1–38.

The present paper is concerned with the question whether and to what extent, within æsthetic appreciation (*Einfühlung*), the lower sensations are present as mediating factors. Æsthetic appreciation is conceived to consist in a fusion of perception and feeling. The question then arises whether this fusion takes place through the mediation of certain lower sensations or without that kind of mediation. There is the still more general question whether æsthetic appreciation always requires a mediating factor or is sometimes immediate. So much for the statement of the problem. The result of the discussion is, that æsthetic appreciation consists in a fusion of perception with mood, emotion, conation, or sorrow. But the ways in which this fusion takes place are different. According to V., there are three ways: (1) somatic mediation, (2) associative appreciation, (3) immediate appreciation. Movement sensations are the chief mediating sensations; *e. g.*, in viewing a picture depicting human or animal bodies in motion, actual movements or memories of movements are present in the observer. Sensations of movement predominate in the world of tone, so far as rhythm and pitch differences are concerned. Pressures and temperatures are mediating sensations in the world of colors and tones, *e. g.*, some tones are hard and others soft. Associative appreciation denotes a weakened degree of appreciation, although an enrichment of content is afforded. Examples of what is meant are the wringing of the hands, throwing oneself on the ground, and an increase of muscular movement. Immediate appreciation, in general, has a small province; it is most conspicuous in poetry and music.

H. C. STEVENS.

ETHICS AND ÆSTHETICS.

The Definition of Will. II. F. H. BRADLEY. Mind, 46, pp. 145–176.

This article considers first the practical identification of self with the idea, the realization of which constitutes volition. The practical relation of the self to its world adds to the mere passive 'otherness' of the not-self, characteristic of the theoretical attitude, the new element of opposition to the self. Along with this new felt opposition of the not-self, goes a felt oneness with the idea in its conflict, the two being inseparable aspects of one fact. In so far as I enter into the content of the idea, I become an object to myself. Since the idea, although itself an object and a not-self, is in its conflict felt especially to be mine, this identification is specific. The result of volition shows further contrast between the attitudes of theory and practice. In the former, it is the object which is actively concerned in the process and affected in the result. My self, not opposed to the object, experiences only passive reaction, and fails of self-realization. In the latter, the realization of the idea in the not-self is less important in itself than as the process by which I have realized my ideal self. To avoid misunderstanding, it must be remembered that the not-self may be internal; but in any case it must be limited, for conflict with my whole world would render life impossible. Before considering agency and the entrance of my self into the content of the idea, reflective volition, choice, and consent are briefly discussed. In reflective volition, self is identified with a higher idea or principle, and, through this, with the particular, related to the higher as the means for its realization, and so for the realization of the self. By this principle are explained choice and consent. Choice is a form of reflective volition, involving rejection of a particular idea in favor of another, both appearing as means to a higher end. Consent is less than volition, but more than belief. With this preliminary, the main question may be considered. The idea of change need not, at the beginning of the process, contain the idea of self, but need only be felt as mine. In the actual realization of the idea, my self, in also being realized, enters into the idea. Agency is thus experienced as such only in the process itself, but, once experienced, tends to qualify future ideas. Perception of agency can be acquired only when the process is felt to arise from my idea, and not independently in the not-self. A lower experience of activity involving no idea realized in the result does not amount to agency, and hence is no evidence of the necessity of the idea in volition. In conclusion, it is noted that (1) the opposition of the not-self is not fixed; (2) through transitoriness and weakness it may not give an awareness of resistance; (3) a strong and definite expectation of the result is possible. Further questions will be discussed in the next article. GRACE MEAD ANDRUS.

Hedonism among Idealists, I–II. B. BOSANQUET. Mind, 46, pp. 202–224; 47, pp. 303–316.

The chapter "On the Supreme Good and the Moral Criterion" in McTaggart's *Studies in Hegelian Cosmology* is criticized in this article as

representative of the progress of Hedonism among idealists; but disagreement does not imply denial of the author's position as a whole. The object is (1) to argue that the Hedonic criterion of the author necessarily passes into a criterion of a different kind; and (2) to explain and defend this other criterion as in harmony with Green's ideas. McT. holds that the Supreme Good, although not merely Hedonistic, must contain pleasure, since derived from a reality which is the perfection of individual natures. Yet because it is abstract, a practical criterion may be substituted, necessarily Hedonic so far as operative, which measures only likeness to the Supreme Good, and not tendency to hasten or hinder its advent. Against this B. argues that (*a*) an extraneous criterion is unsafe; (*b*) a criterion can be applied only through a systematic individualized construction; (*c*) achieved good remains. McT.'s argument that the possession of a sum of pleasures is possible in the same sense as is perfection or good will, is held to be based on a confusion of identity and similarity. For a series of states characterized by perfection or good will, form a true concrete identity based on a coöperation of differentiated parts; while states containing pleasure are identical only in the possession of a common element. McT.'s claim that choice involves a quantitative comparison of sums of pleasures and pains as homogenous wholes, is not verified by introspection. Quantitative comparison tends here to pass into a process analogous to the estimation of theories with reference to their truth. Choice rests on the acceptance of some hierarchy among the activities of life. B. also urges that the direct argument against the objection that pleasures cannot be added, apparently assumes the point at issue, *i. e.*, that pleasures are quantitative in a numerical sense, which assumption involves important psychological problems. Further, what may be regarded as the 'relativity of pleasure' renders Hedonic calculation impossible, and causes the nature of the criterion to change. By this is meant that variation in affective values which occurs with change in the trend of interest and desire, and in the combination of factors, and consequently takes place during the very act of deliberation, which consists in conscious readjustment of combinations. The claim for the correctness of the Hedonic criterion in the satisfaction of actual ideals, is confused by identification of happiness with the greatest quantity of pleasure. Pleasure cannot be the guide to happiness, or complete satisfaction; for the sciences of ethics and æsthetics have been built upon the failure of the natural man in following this direct process. Happiness is only achieved by a foregoing of the 'easy' pleasures and a choice of the 'arduous.' An adequate theory might be based on a distinction between bodily, or relatively partial, and spiritual, or relatively total, satisfactions, in which pleasure would be a concomitant of, but not proportional to, satisfaction.

The second paper deals with McTaggart's objection to the idea of perfection as a moral criterion. What has already been said regarding the nature of a true criterion and the true process of judgment may be ap-

plied to McT.'s contention in three respects : (*a*) to his ruling out the work of a criterion in hindering self-deception ; (*b*) to the assumption that the idea of perfection can be applied only by comparison in the abstract ; (*c*) by showing that the process advocated is not confined to development of ideals alone. (*a*) McT.'s argument here virtually separates the moral and intellectual elements in choice, by assuming that the chooser, already having determined to do right, needs the criterion only as a means of impartial judgment. But in most moral choices the application is not to *bona fide* perplexities, and hence the criterion of perfection is safer, since less open to the self-deception of desire. (*b*) In *bona fide* moral difficulties, McT. argues, the idea of perfection can be no guide, for no comparison is possible between an abstract universal and the concrete particulars of experience. In reply to this, B. urges that such comparison is parallel to the attempt to deduce scientific details from the Principle of Uniformity of Nature. Although abstract comparison is in both cases fruitless, yet the principle in each must be the ultimate basis of a working theory, without which practical results are impossible. The dependence of morality on the metaphysical idea of the Supreme Good is essential for its ultimate unity, but not for the immediate working-out of detail. In this, choice, which is always compromise, is based on existing morality and the social conditions determining the individual problem. The aim is always toward removal of contradictions in experience and the attainment of satisfaction by following the logic of the objects of desire. Each decision is based on a rationalized habit in conformity to the central design of life. This mode of determination of concrete detail is dominated at every stage by our idea of perfection representing our best construction for that stage, and constantly subject to the criticism of metaphysics. (*c*) This point of view brings into relation the two standards of immediate harmony with environment and of development of ideals. Happiness, or satisfaction of the whole to which we belong, is the only test, and can be applied only in the light of individual experience. In conclusion, a possible contention of McT.'s, viz., that the above involves a confusion of the empirical and metaphysical, is met by accepting at the outset the imperfection of morality as a whole and of our morality. Although actual morality cannot in itself claim metaphysical sanction, the logical effort towards harmony is consistent with, and implies, ultimate perfection. Our experience, while in one sense less perfect, yet in another is a fuller revelation than an abstract idea of ultimate reality.

GRACE MEAD ANDRUS.

Esquisse d'une philosophie des conventions sociales. A. SCHINZ. Rev. Ph., XXVIII, 6, pp. 601–633.

The starting point of this discussion is found in Thoreau's *Walden*. A brief sketch of this book and its author is followed by the question : Why has not practice followed theory among the many who have praised this

eloquent plea for life according to nature? S. attributes Thoreau's failure to win disciples to his false analysis of the really simple life, and lack of historical sense in estimating modern social conventions. For all except the philosopher poet, such as Thoreau himself, the primitive life led at Walden would defeat its own purpose, spiritual development. Utility is here made the sole consideration in the selection of food, clothing, and shelter. A vegetarian diet is urged, as the use of meats and delicately prepared foods develops the animal in man at the expense of the intellectual. Society is spoken of as a slave to fashion in dress, and the rich man in his mansion is considered scarcely more free than the prisoner behind the bars. But all this is a mistaken view of the advantages of civilization. Health of body and therefore of mind is promoted by the *cuisine*. As for animal food, it is unavoidable that warfare and death should be the law of progress. Clothing and shelter have an æsthetic as well as practical value, and this Thoreau overlooks. In spite of appearances, the trend of convention is towards the greatest possible freedom. In society, as elsewhere, the change from the simple to the complex marks the path of improvement Social usages have a survival value, a moral or economic reason for their existence; their development constitutes an historical science. Etiquette follows fundamental rules of morality, and is most rigid where the greatest need of restraint is felt. True, there is some right conduct which is above convention. But to act wisely in defiance of social custom presupposes a superior class of moral agents, such as Nietzsche describes. Whether or not his view is the right one the future must decide.

ANNIE D. MONTGOMERY.

Sociologie et sciences sociales. E. DURKHEIM et P. FAUCONNET. Rev. Ph., XXVIII, 5, pp. 465–497.

If sociology is to be a science, is it to have the same object as those special sciences called historical and social, and thus be confounded with them, or is it to be a distinct science, having an object especially pertaining to it? The authors point to this as the inevitable dilemma, if sociology is to have anything more than a merely verbal significance. Their purpose is to show that sociology is, and can be, only the system, the *corpus* of the social sciences, and that this comprehension under a common title does not constitute a simple verbal operation, but implies a radical change in the method and organization of these sciences. The founders of sociology, they argue, did not regard it as a system of social sciences. With Comte (as with Spencer later) it was of a philosophical nature, and maintained a certain indifference to the detail of facts and researches of specialists. The dynamic, rather than the static, side was alone treated. Comte's method opposed a division of the work into the progressive quantity of specific questions which progress necessitates. With more recent sociologists, however, there has been a tendency to maintain a *general* social science, opposed to the particular disciplines, and having its own object and

special method. For Mill the object was the "states of society," such as succeed each other in a people's history. But it is evident that these "states of society" are made up of an assemblage of phenomena so diverse that it is impossible for one and the same science to master them; and the science of society must thus become a multitude of distinct branches. Moreover, one state of society is not an indivisible identity, a whole produced by a whole; rather, each part has its genesis in another part. For Giddings, again, the general social science is based on the fact of association and its elementary forms. The latter, however, never exist in isolation. The primary fact appears to Giddings to be the social population. But there is a special science — demography or demology — which treats of population. The vague indetermination of the object that we find in Tarde, Gumplowicz, Ward, and others, means no real science. Finally, Simmel holds that the object of the general social science is the social form, as distinguished from the social matter. The special sciences treat of what occurs in society; general social science treats of society as such. This distinction between the contained and the containing, however, is difficult to maintain; for society is characterized in form only by matter or content, by the actions and reactions which occur between individuals. If form thus depends on matter, there can be no science of form, matter abstracted. To conclude, the authors hold that sociology must treat of societies in their organization and development. It cannot be merely a system of special sciences. Comte's notion of the social reign in general has significance, and must be brought into the detail of facts and acclimatized in the special researches. A tendency in this direction has recently been manifested in the transformation, *e. g.*, of historical method, of the study of religions, etc. The problem for sociology is to develop a certain number of existing sciences under a social aspect. The social idea is to descend profoundly into the diverse specializations, and the unity of the social reign, guaranteed by the fact that social phenomena are manifestations of the one reality, society, will find its adequate expression in the various social sciences, not in any general philosophical formula.

C. A. HEBB.

Physical Law and Life. J. H. POYNTING. Hibbert Journal, I, 4, pp. 728–746.

A physical law is the statement of certain likenesses which we observe in the action of nature; each law is a typical instance which expresses the essential fact of a great body of phenomena. Finally, in our observations we are brought face to face with a simple type which we cannot explain by likening it to any other phenomenon. In the physical series we are able to foretell events by our knowledge of laws and conditions. The question arises: Does a similar uniformity exist in the psychic series, and could an observer foretell events in that series provided he had sufficient data? There appears to be a lack of analogy between the physical and psychical

series, and hence we are led to believe that each individual is unique, a fact not to be brought under a law of likeness with other beings. The freedom of the will is a simple fact, unlike anything else, inexplicable. Any calculation, therefore, in the psychic series would miscarry because of the power of the will, not, indeed, to create energy, but to direct it.

GEORGE H. SABINE.

The Limitations of Ethical Inquiry. NORMAN WILDE. Int. J. E., XIII, 4, pp. 458–466.

The presuppositions of ethics are common to all the natural sciences. None of these is called upon to prove the existence or the possibility of knowledge about its subject matter. Each is free to start with unquestioned data and to investigate them with uncriticized knowledge. In their general method, also, ethics and science are at one. To understand anything, whether physical or moral, is to interpret its meaning in terms of universal experience, and to this end the only sound method of procedure is observation and analysis. Yet the explanatory symbols or concepts of ethics are of necessity unique. The world of experience presents itself as a problem both for our intellect and our will, as an objective series and as an ideal system of values. The concept expressive of the former aspect is causality, of the latter, obligation. These, obviously, are not interchangeable. Causality has no significance in ethics, nor has obligation in physics. Thus the demand for one absolute category of scientific interpretation is illegitimate. The standard by which we value facts is not itself a fact.

A. D. MONTGOMERY.

Dis ästhetische Bedeutung des absoluten Quantums. MAX DESSOIR. Z. f. Ps. u. Phys. d. Sinn., XXXII, 1, pp. 50–66.

If art were concerned simply with beautiful appearance, no quantitative determinations would affect it. But, as a matter of fact, a certain amount of quantity is necessary for the production of æsthetic satisfaction. The quantity may be spatial, as in the dimensions of a church or a picture; it may also be temporal, as in the repetition of a figure in decorative designs; or it may be intensive, as in music. The rule, first pointed out by Fechner, which underlies these facts, is that the magnitude of a work of art shall be proportional to its æsthetic significance, *i. e.*, its outer magnitude must be equal to its 'inner' magnitude. This rule is borne out by Burke's thesis, that the sublime is concerned with great objects and the beautiful with small ones.

H. C. STEVENS.

NOTICES OF NEW BOOKS.

An Introduction to Systematic Philosophy. By WALTER T. MARVIN. New York, The Columbia University Press, 1903.—pp. xiv, 572.

According to the author, this book is not an historical introduction to philosophy. Only in a few cases does it deal with the history of the problems under consideration. Nor is it a handbook of philosophy; "it does not give *pro* and *con* all the various doctrines held by great philosophical writers of the past and leading writers of the present." The book is an attempt to state and explain the chief problems of philosophy as problems actually existing to-day, and to give such solution of these as the author is able to give. Its chief value, he thinks, lies in the selection and order of the problems with which it deals.

The work is divided into six parts. Under Part I, entitled "Metaphysics," we have "The Philosophy of Nature," "The Philosophy of Mind," "Ontology," "Cosmology," and "Cosmogony." Part II is devoted to "The Theory of Knowledge," discussing "The Nature of Knowledge," "The Validity of Knowledge," "The World as Presupposed by Knowledge," and "The Manifold Interpretation of the World." The next three parts deal with "The Philosophy of Religion," "Theoretical Ethics," and "Æsthetics," while in a concluding division, headed "Philosophy as a Science," general problems concerning the nature and method of philosophy are discussed.

The standpoint of the work is defined by the author as 'rational idealism.' By 'idealism' he means the doctrine that denies the existence of a transcendent world and limits all problems to the world of experience. By 'rationalism' he means that our attempt to interpret the world presupposes premises or *a priori* truths about the world. Against naturalism he maintains that man's ideals can rightly lay claim to the same validity as does science; and in behalf of naturalism he attempts to justify the atomic, mechanical interpretation of nature and indirectly of mind.

The task which the author has set himself in this book is, of course, an immense one, perhaps the largest task which the human mind can set itself. No one should, in my opinion, undertake to publish a complete theory of the universe in our days who has not had a great deal of philosophical experience, and who has not made a careful study of the different special problems in the field. Dr. Marvin appreciates this fact when he says: "I am quite aware that the book has many faults, but my excuse for publishing it now is, first, the belief that it is an approach toward what an introduction to philosophy should be, and, secondly, the desire to learn through it how to write a better introduction some time in the future, especially in case a second edition is called for. Doubtless, the reader

will find inconsistencies; but inconsistency between the solutions of different problems does not seem to me a fatal fault, for I believe that we philosophers should profit by following the example of natural science and devoting ourselves chiefly to separate problems and their solution, even if we have to set aside for the time being the making of a system. Hence I have tried to present a series of problems and their solutions rather than a complete philosophical system."

But it does not seem to me that the desire to learn how to write a better introduction some time in the future, especially in case a second edition is called for, is a sufficient excuse for such an enterprise. I do not regard this book as thorough or mature enough to serve any good purpose; it does not go to the bottom of things, it is not what the Germans call '*durchdacht*.' It does not, in my judgment, make a sufficiently careful study of the different special problems, the very thing which it starts out to do. Particularly disappointing is the treatment of the substance problem, the causality problem, the soul-substance problem, dualism, interaction and parallelism, the theory of the conservation of energy, the atomic theory, the teleological problem, and the freedom of the will. All of these are fundamental questions, and on the correct solution of them everything depends. And as for inconsistency and lack of system, it seems to me that the more thoroughly the problems are worked out, the less inconsistency there is bound to be. I think the beginner will often feel lost in studying this book, he will not see the connections, he will not be able to make the results of different chapters fit into each other.

In dealing with many problems, the author's treatment seems unfortunately vague, confusing, and conflicting. Everything is atoms in motion, and at the same time atoms are mere abstractions. The physical and mental are both manifestations of the same substance which determines their character, and yet the mental must be explained by the physical, and the mental is a special creation and creation is inexplicable. We are told that our mental life possesses that unity of structure and that permanence of character which justifies us in calling it a thing; that its unity is the soul, and the principle and character of this unity are just what we mean by personal identity. Then, again, we cannot find permanent qualities in secondary qualities and mind! And to multiply our troubles, we are told in a chapter concluding the metaphysics: "The world in the concrete is truly one analogous to our wills. Creation is ever taking place. Spontaneity describes it as does no other term. . . . The world is will, if you choose so to call it; but it is will in a broader sense than psychology uses that term. The world is alive, but it is alive in a broader sense than biology uses the term. . . . The world contains life and it contains spirit. It creates both. There can be no contradiction between it on the one hand and life and will on the other." This teaching, taken in connection with the general impression created in the theory of knowledge that the will is the primary and ultimate reality, only adds a new difficulty and increases the confusion.

In his theory of knowledge, Dr. Marvin is, as was already stated, an idealist and a rationalist. There is no transcendent world. The object of knowledge is always a fact, always some real or existing thing. Facts are always given through consciousness. Our perception is not a fact; it is fact *plus* recognition or interpretation. The given is the sum-total of facts revealed to our present consciousness. The given is the absolute. "It is consciousness or the content of consciousness, only in the sense that robs this term of all meaning. That is, it is not consciousness. The given is obtained, in short, by robbing the interpreted fact of all interpretation and so leaving us the fact and nothing more. The given is the reality, the absolute, in short the object robbed of every trace of interpretation, relativity, or aught else in the form of knowledge." That is, the given is a mere abstraction, like the atom, the result of a process of analysis, and it is nonsense to talk about our "intuiting" it, as Dr. Marvin does. If to know means to interpret, and the given is the object robbed of every trace of interpretation, how can we say a single word about it, or even refer to it without contradiction?

The arguments urged against the existence of a transcendent world also strike me as very inadequate. A transcendent world would be absolutely unknowable, says our author; because, to know is to have in the mind, the object must be revealed to us. Now the transcendent cannot be experienced or revealed to our mind, hence it cannot be known. Again, we cannot predicate anything of the transcendent, not even existence, for existence is whatever manifests itself to our minds. The transcendent does not manifest itself, hence it does not exist. All this looks like question-begging to me. If to know means to have in the mind and existence means to be in the mind, why, of course, what is not in the mind does not exist. All that is very simple, to be sure. Still I do not understand how on this line of reasoning we can assert the existence of a given, of other minds than our own, of an infinite universe, of a will, of God, etc. I do not see how, in spite of all these desperate attempts about the given, this kind of idealism can transcend subjectively, or differ from solipsism.

Rationalism or apriorism is justified as follows: Knowledge transcends its premises and has a right to. Knowledge presupposes principles, *e. g.*, the knowableness of the world. The world is knowable, hence knowledge cannot be invalid as a process. Whatever premises are needed for knowledge to do its work must be granted. Among these principles of reality, Dr. Marvin enumerates the following *mixtum compositum:* Causation, repetition, change, past, present, and future, likeness and difference, subject and object, absolute and relative, infinite and finite.

Beyond knowledge lies the will. Our ideals are what our will chooses; they are expressed in judgments. Hence the ideal is also an interpretation of the world and is just as valid as the scientific judgment. For the ultimate authority in life is not the real, but the ideal. To know is ultimately but one mode in which the ideals of our mind are being realized. Besides, if

our wills and feelings have no valid right to judgments that express their ideals, then action is impossible and even knowledge could not be. So the ideal has absolute authority over life. If our ideal judgments are valid, all must be granted them which alone makes the ideal valid. The author finds that we have such ideal judgments in religion, ethics, and æsthetics, and proceeds to illustrate at length the function of the ideal in these fields.

The whole method employed here strikes me as very loose and unsatisfactory. We have a right to our ideals, some of them help us to live; but it does not follow from this that they are *valid* in the same sense in which a scientific judgment is valid. Indeed, the term *valid* seems to be out of place here. We may grant, moreover, that if we did not will, we should not know and act; but it does not follow from this that, if our ideals (or what we will) are not valid, knowledge and action are impossible. Again, it does not follow that because we are conscious partners and co-workers with the creator or because we approve of particular acts or parts of the world, that therefore we approve of the world *as a whole*. Nor would it be a logical contradiction for us to approve of particular acts and yet despise the world as a whole. And, finally, it would not necessarily follow from the fact that I despise the world as a whole, that knowledge is impossible.

The only ideal that Dr. Marvin seems to have left after all is that the world is ideal, that there is no inherent contradiction in our living as such. A man who approves of the world and reverences it, has this ideal, has religion, believes in God. According to this view, the ideals of a selfish and base nature would have just as much value as any one's else, and be just as valid as a scientific judgment. It would appear that as long as a man approves of the world and believes that it realizes his ideal, everything is all right.

The attempt made to prove the logical necessity of our ideals, to show that there can be no knowledge, no action, unless we grant the validity of our ideals, cannot but fail. In the last analysis we cannot prove the validity of our ideals, but must accept them as facts. They represent our attitude towards reality, and the terms true and false, valid and invalid, do not apply to them. Dr. Marvin has more faith in the ability of the human mind to furnish absolute proofs than I have.

In conclusion, it is to be regretted that Dr. Marvin has followed the too common practice of failing to mention the English translations of the works from which he quotes. This is not a very serious matter, of course, but when one draws on a translation for lengthy passages it seems only right to make acknowledgment.

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History of Philosophy. By WILLIAM TURNER. Boston and London, Ginn and Co., 1903.—pp. v, 674.

The writer explains that his "purpose in compiling this text-book has been so to set forth the succession of schools and systems of philosophy as to accord to scholasticism a presentation in some degree adequate to its importance in the history of speculative thought." Yet this statement, taken by itself, does less than justice to the thorough scholarship, the appreciative insight, and the eminent fairness which characterize the work throughout. The author's predilections are, indeed, often apparent, but very little of the spirit of partisanship creeps into his pages. He is sincerely convinced of the validity and significance of the essential ideals of scholastic thinking; and his ample knowledge and sympathetic exposition have a very telling effect upon the reader. Nor is it true that the care bestowed upon the period of Scholasticism has resulted in leaving the other periods to be treated in a perfunctory manner. Both the ancient and the modern periods have been treated with reasonable completeness, and in a manner which gives evidence of extended acquaintance with the best works in the history of philosophy. Two hundred pages are given to ancient philosophy, two hundred to the mediæval period, and two hundred and fifty to modern philosophy. A preliminary sketch of twenty-five pages summarizes the thought of the Oriental nations of antiquity. As the narrative passes through the period of Greek philosophy, we have, to be sure, little that is original, but we have in general good insight, clear judgment, and clear exposition. The judgment passed upon the atomists, however, fails to do justice to the great importance of atomistic conceptions in science, or to recognize the vitality and significance of the logical motives which went to create and sustain them. "The atomists fall lower than the level which the early hylozoists had reached" (p. 65). And the Sophistic movement is not valued highly. "It was the philosophy which suited that age. . . . Yet Sophism did not constitute an advance in philosophic thought. It is true that it directed attention to the subjective element in human knowledge. In fact, it made the subjective element everything in knowledge. And herein lay the essential error of Sophism, vitiating the whole system" (pp. 74–75). But surely the recognition of the subject as a coefficient in knowledge was a very marked philosophic advance. One wishes also to see the Sophists credited with making men more sharply conscious of the problems, the solution of which gave rise to Greek idealism. We soon discover, however, that Father Turner does not sympathize with idealism, either in its sensationalistic or in its rationalistic form. Plato's personality and spirit appeal to the author, but his philosophy is objectionable. "Nothing is clearer than that Plato understood by the Idea something existing apart from the phenomena which make up the world of sense" (p. 101). The Aristotelian critique is consequently justified. Indeed, both here and repeatedly throughout the work Peripatetic preferences become apparent. The account of Platonism is vigorous and clear, except in regard to two

significant doctrines: the doctrine of recollection is described, in one short paragraph, in a way which gives no inkling of the genuine meaning for epistemology of the theory of the idealism of the human intellect; and the description of the basis of ethics and of the state by no means succeeds in getting clearly before the reader the essential ideas of the Republic. An uncommonly detailed description of Aristotle is attempted, and shows the author at his best. The problem regarding active intellect is described with comments adverse to transcendentalism. Aristotle's teaching of the eternity of the world is met by the contention that his premises, if carried to their logical conclusion, would lead to the doctrine of creation.

As soon as we enter the Christian era, we find that "from this time onward there will be the religious view and the rationalistic view of every question" (p. 215). "From the beginning, however, the rationalizing spirit of which mention has been made began to assert itself in a tendency on the part of some Christian writers to subordinate revelation to the teaching of pagan philosophy. It was from this tendency that the heretical systems sprang. At the same time, the religious spirit, working in the minds of the orthodox exponents of the teachings of Christianity, led them to place high above all human speculation the authority of Christ and His Church, although they did not reject the philosophy of the pagan world, but made use of it in their expositions of revealed truth. Writers of this class are the true philosophers of the early Christian era" (p. 217). Now it was the supreme task of Scholasticism to organize this conviction of the existence of a supernatural truth, and to harmonize it with the just claims of reason. "The schoolmen were the defenders of the rights of reason" (p. 417), and Father Turner repeatedly urges that the doctrine of the two-fold truth was Averroistic and hostile to Scholasticism. In the Thomistic contention that the realm of faith is above reason and yet continuous with it, not hostile, Scholasticism expressed the thought which had throughout inspired its labors, and the thirteenth century is its Golden Age. Subsequent schoolmen failed to extend the essential thought of Scholasticism and to interpret it in relation to natural science. They wasted their powers in idle dialectic. They opposed the scientific spirit, the very spirit of Aristotle. They took up the doctrine of the two-fold truth, and thus by treason they brought about the destruction of that which in itself deserved to be perpetuated. Indeed, the Thomistic philosophical synthesis is fully as successful as any which has been attempted since, and our attitude toward it should be, *Vetera novis augere et perficere*. This period is treated in a very successful manner, and sets in a deservedly favorable light a movement often handled with little appreciation.

Cartesianism fares ill. Father Turner sympathizes neither with its rationalistic, Platonic motive, nor with its dualism. One is gratified, then, at the excellent account of Spinoza, almost perfect both in matter and manner. The English "sensists" are neither highly valued nor fully presented. The system of the arch-representative of idealism, Hegel, is outlined as

completely and strongly as any devotee of that view could wish. It seems strange that while, on page 629, the writer looks to the followers of T. H. Green to determine the future trend of philosophy in England, on page 649 he holds that the future course of philosophic thought in America is likely to be influenced less by the Neo-Hegelians than by the Neo-Voluntarists. The conclusion of the whole matter is that philosophy does not advance steadily toward a more perfect grasp of truth, but that its history is like a record of wave movement, a chonicle of advance and retrogression, and one of the highest waves was the one which marked the thirteenth century.

The book seems to contain fewer errors regarding matters of fact than any other manual I know. The style is simple, clear, and agreeable, so that the impression made by the work as a whole is more favorable than this brief sketch of its peculiarities might indicate.

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The Theory of Prosperity. By SIMON N. PATTON. New York, The Macmillan Co., 1902.—pp. 237.

To students of economics, for whom Professor Patton's *Theory of Prosperity* is primarily intended, the chief interest in the work will lie in the bold treatment of the classical categories of distribution. Overlapping of the conventional funds — wages, rent, and interest — has gone so far that, in his opinion, nothing short of a complete new classification can obviate the difficulties thus created. No doubt this attitude of dissatisfaction at certain outworn distinctions is broadly characteristic of economic thought at the present time, however little one is inclined to follow Professor Patton in all his conclusions. It seems unfortunate that, in maintaining so strong a position, the argument should be used, even casually, that the "putting together the rent of Henry George, the profits of Walker, the interest or exploitation fund of Marx, and the wages of Ricardo or Clark does not give the total product of industry, but a much larger fund" (p. 6). Certainly all that can be asked of any individual economist is that his scheme of classification shall be consistent with itself and with the facts of the economic world. Tests like the above would readily produce the appearance of 'overlapping' in all the phenomenal sciences, even if writers were not chosen whose fundamental positions are so unlike as those of Ricardo, Marx, Walker, George, and Clark.

Professor Patton's own division of the subject is based upon the distinction between income as due to existing conditions of environment, and income as determined by heredity. The laws of the first are presented as physical and economic; of the second as mental and social. The author's attitude toward the conventional classes of distribution is stated as follows: "Instead, therefore, of being three distinct funds [wages, interest, and rent] these shares are the bases of three view-points from which income may be

examined. Give to wages its broadest meaning, and both rent and interest disappear. Do the same to rent and interest in turn, and in the one case there is neither wages nor interest; in the other neither wages nor rent" (p. 8). To this it may well be objected that what is needed in economics at the present time is not the "broadest meaning," which causes differences to disappear, but clear, consistent definition and interpretation of the facts of the economic world. There are few, however, who would be unwilling to concede the brilliance and suggestiveness of many of the details of Professor Patton's argument. His extensive use of the principle of substitution gives it a significance which it has failed of obtaining in many current discussions. The relation between increased variety of consumption and interest (p. 101) and the statement of the consequences arising from interest-paying in a community where the minority do not feel the need of following social customs (p. 103) are well developed, though here attention seems to be drawn to the accidents rather than the fundamentals of the theory of interest. On the other hand, most of Professor Patton's readers in economic circles will object vigorously to his attempt to read costs out of the lexicon of the science.

The second part of the work, devoted to the social aspects of income, is divided into three chapters: income as fixed by struggle, income as increased by adjustment, and income as modified by economic rights. Particularly interesting is Professor Patton's treatment of exploitation, which emphasizes the will of the exploited to be exploited. Many of the economic rights which he maintains would entail consequences which are not discussed as fully as one might desire, although an attempt to do so would undoubtedly have extended the treatise to cyclopædic dimensions.

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La sociologie positiviste: Auguste Comte. Par MAURICE DEFOURNY. Paris, Alcan, 1902. — pp. ii, 370.

In view of the increasing interest in all social problems and in the science of sociology, this work is one to attract attention, while by reason of its clearness and systematic arrangement, as well as a certain vigor of treatment, it holds the reader's attention to the end.

In an introductory chapter, the author gives a brief biographical sketch of Auguste Comte, followed by a bibliography of his works and another of critical and biographical matter. Part I, which comprises some two hundred pages of the volume, is an exposition of Comte's social theories disentangled from the mass of his writings and brought together in something of systematic completeness. Comte's system is presented in four main divisions — the prolegomena to sociology, static sociology, dynamic sociology, and the consummation of sociology in the religion of humanity. The work of selection and organization is done with much care and with admirable clearness. While M. Defourny does not wholly suppress his own opin-

ions, for the most part he contents himself with indicating the direction that criticism has taken or should take.

Part II is a criticism of Comte's sociology. Following the order of exposition in Part I, the author proceeds to elaborate a searching criticism of Comte's method and principles. The exact correspondence of the second part to the first by similar divisions and subdivisions will probably be somewhat distasteful to most readers, suggesting the precision of mechanical adjustment; yet this arrangement carries with it the advantage of ease and accuracy of reference. The author has purposely ignored the historical development of sociological doctrine, so far as any explicit tracing of such development is concerned. His work is strictly dogmatic and critical.

M. Defourny's conclusions may be summed up as follows: Comte cannot be accredited with much originality either in matter or method. He owes much to Aristotle, Montesquieu, Adam Smith, Burke, La Mennais, Turgot, and others. He is somewhat in debt even to the Catholic theologians. It is his chief merit that he gathered up the disordered and incoherent ideas of his time and worked them over into a system of sociological doctrine. His work can scarcely be termed scientific, however, since his laws are rarely true to facts. In his employment of the method of observation, Comte belongs to the nineteenth century; in the deductive rigor of his system, he is of the eighteenth. More exactly, he is a transitional thinker, partaking of the characteristics of both periods.

VIDA F. MOORE.

Joh. Fr. Herbart: Sein Leben und seine Philosophie. Von WALTER KINKEL. J. Ricker, Giessen, 1903. — pp. 204.

In this work the first fifty pages are devoted to a sketch of Herbart's life, while the remainder consists of an outline and criticism of his metaphysics, psychology, practical philosophy, æsthetics, philosophy of religion, and pedagogy. The method followed throughout is to present first a complete outline of the subject under discussion, and then to add some brief but suggestive comments by way of criticism. While it would seem that the exposition would have been improved if Herbart's connection with Kant had been kept in view more constantly, the author is nevertheless to be commended for the ability which in the main characterizes his handling of the subject. The book, while containing nothing very novel, presents the main features of Herbart's thought in a clear and skilful manner, and in the critical passages the author shows especially how the rationalistic leaven is present throughout the Herbartian system. Certain shortcomings, however, must also be admitted. To cover, as the author attempts to do, so great a variety of subjects within the small compass of two hundred pages, obviously requires considerable condensation, and this in some places impairs more or less the value of the work. This is especially true of the section on Herbart's pedagogy, which is dismissed with a summary statement the brevity of which is out of all proportion to its relative value.

The author himself is aware of this defect, and explains it by stating in the preface that the book was originally intended for Frohmann's series of the "Klassiker der Philosophie." In the present form of the book, the exposition of Herbart's pedagogy appears as a sort of adjunct, too condensed and general in statement to be very helpful or satisfying. In general, however, the work affords an excellent survey of the various phases of Herbart's thought and is well worth a careful reading.

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The following books also have been received:

Dissertations on Leading Philosophical Topics. By ALEXANDER BAIN. London, New York, and Bombay, Longmans, Green, and Co., 1903.—pp. vi, 277.

An Introductory Study of Ethics. By WARNER FITE. New York, London, and Bombay, Longmans, Green, and Co., 1903.—pp. xi, 383.

The Mental Traits of Sex. By HELEN B. THOMPSON. Chicago, The University of Chicago Press, 1903.—pp. vii, 188. $1.25.

The Unity of Plato's Thought. By PAUL SHOREY. Chicago, The University of Chicago Press, 1903.—pp. 88. $1.25.

Evolution. A Lecture by CHARLES WHEDON. Medina, N. Y., Charles Whedon, 1903.—pp. 32.

The Place of Values. By GEORGE R. MONTGOMERY. Bridgeport, Conn., G. R. Montgomery, 1903.—pp. 62.

A Plea for Hedonism. By JOHN C. PALMER. Wooster, Ohio, J. C. Palmer, 1903.—pp. 67.

Kant's gesammelte Schriften. Band IV. Berlin, Georg Reimer, 1903.—pp. viii, 652. M. 12.

Grundzüge der physiologischen Psychologie. Von WILHELM WUNDT. Funfte völlig umgearbeitete Auflage, Dritter Band. Leipzig, W. Engelmann, 1903.—pp. ix, 796.

Friedrich Nietzsche: Sein Leben und sein Werk. Von RAOUL RICHTER. Leipzig, Verlag der Dürr'schen Buchhandlung, 1903.—pp. 288.

Die soziale Frage im Lichte der Philosophie. Von LUDWIG STEIN. Zweite verbesserte Auflage. Stuttgart, F. Enke, 1903.—pp. xvi, 598.

Grundriss der Religionsphilosophie. Von A. DORNER. Leipzig, Verlag der Dürr'schen Buchhandlung, 1903.—pp. xviii, 448. M. 7.

Philosophisches Lesebuch. Herausgegeben von MAX DESSOIR und PAUL MENZER. Stuttgart, F. Enke, 1903.—pp. viii, 258.

Gesammelte Aufsätze zur Philosophie und Lebensanschauung. Von RUDOLF EUCKEN. Leipzig, Verlag der Dürr'schen Buchhandlung, 1903.—pp. 242. M. 4.20.

Gott, Religion. Von A. ELEUTHEROPULOS. Berlin, E. Hofmann & Co., 1903.—pp. xi, 138.

Gehirn und Seele. Von PAUL SCHULTZ. Leipzig, J. A. Barth, 1903.—pp. viii, 55.

Gefühl und Bewusstseinslage. Von JOHANNES ORTH. Berlin, Reuther & Reichard, 1903.—pp. 131.

Das Kausalproblem in Lotzes Philosophie. Von ELSE WENTSCHER. Halle a S., Max Niemeyer, 1903.—pp. viii, 66.

Der Agnostizismus Herbert Spencers mit Rücksicht auf August Comte und Friedr. Alb. Lange. Von WILHELM GENZ. Breslau, H. Fleischmann, 1902.—pp. 57.

Beiträge zur Geschichte und Kritik des Naturalismus. Von A. R. SCHLISMANN. Kiel und Leipzig, Lipsius & Tischer, 1903.—pp. 199.

Philosophie de l'effort. Par A. SABATIER. Paris, Félix Alcan, 1903.—pp. 480.

Études de psychologie physiologique et pathologique. Par E. GLEY. Paris, Félix Alcan, 1903.—pp. viii, 335.

Les phénomènes psychiques. Par J. MAXWELL. Paris, Félix Alcan, 1903.—pp. xi, 317.

Dieu et l'âme. Par ADOLPHE COSTE. Paris, Félix Alcan, 1903.—pp. xvi, 184.

Saggio di uno studio sui sentimenti morali. Per GUGLIELMO SALVADORI. Firenze, F. Lumachi, 1903.—pp. viii, 138.

Osservazioni sullo svolgimento della dottrina delle idee in Platone. Per G. LOMBARDO-RADICE. Firenze, Tipografia Galileiana, 1903.—pp. 91.

NOTES.

McTaggart's Interpretation of Hegel's Category of Cognition.

The review of McTaggart's *Studies in Hegelian Cosmology*, printed in the Philosophical Review of March, 1903, argues against McTaggart's view that Hegel conceives of God as "the deepest unity possible . . . of related persons," in other words, as a society or community. To the arguments which this review brings forward against McTaggart's interpretation of Hegel's teaching, at least one other may be added. It is gained by a consideration of the connection of Hegel's category of Cognition with the preceding category, Life, and with the following category, Absolute Idea.

Hegel evidently meant the divisions Life, Cognition, and Absolute Idea to form a triad. In the category of Life, though both the individual and the universal are recognized, the universal — the race or type — is emphasized. The logical antithesis of this category is one in which universal and individual are recognized, but in which the universal is made more prominent. Accordingly, Hegel opposes to Life the category of Cognition in which "the idea exists free for itself in so far as it has universality for the medium of its existence."[1] Finally, as reconciliation of the over-universality of Life and the over-individuality of Cognition, Hegel reaches the concluding category of Absolute Idea, "the unity of the idea of Life with the idea of Cognition."[2] "This unity," he says,[3] "is consequently the Absolute and all truth, the Idea which thinks itself."

By the natural interpretation, not only of the specific expressions quoted, but of the entire movement of the dialectic in this last triad of the *Logic*, Hegel must be conceived as teaching that an Absolute which is conscious of itself is the reality underlying the subordinate realities of life, on the one hand, and conscious individuals (Cognition), on the other hand. McTaggart makes two distinct objections to this interpretation.

He urges, in the first place, that cognition is not, for Hegel, necessarily identical with consciousness, and that therefore, in attributing cognition to the Absolute Idea, Hegel does not necessarily attribute consciousness.[4] The category of Cognition, according to McTaggart, means "a unity which is not only *in* the individuals but *for* the individuals."[5] To be sure,

[1] *Encycl.*, § 223.

[2] *Ibid.*, § 236, note.

[3] *Ibid.*, § 236.

[4] *Studies in Hegelian Cosmology*, §§ 16–18. Cf. *Mind*, Vol. IX, N. S., pp. 149–151.

[5] *Studies in Hegelian Cosmology*, § 14.

"there is only one example of such a category known to us in experience, and that is a system of conscious individuals," yet there may be some non-conscious example of this category beyond our knowledge or imagination.[1]

This is certainly an ingenious argument for the theory that an Absolute which "unites the idea of life with the idea of cognition" is yet non-cognitive in the only sense which the word 'cognitive' has for us. The futility of such an argument is, however, recognized by McTaggart himself in another connection. In commenting on the abstract possibility (as he calls it) that the Absolute may "in some way utterly inexplicable to us be personal," he says: "This is the barest and most worthless abstraction of possibility. To say that something which is utterly unimaginable may be true . . . is, by itself, merely trivial." Judged by his own standard, therefore, McTaggart's theory that cognition, when attributed to the Absolute, means 'unconscious cognition' is entirely unconvincing.

In the second place, however, McTaggart argues even more boldly that the categories Life, Cognition, and Absolute Idea form a spurious triad, that Cognition is the completion, not the antithesis of Life, and that Cognition is virtually identical with Absolute Idea. "Is the transition," he says, "from Life to Cognition validly demonstrated? It will have been noticed, no doubt, that, although these two categories form the Thesis and Antithesis of a triad, the passage from one to the other has about it a great deal of the nature of a transition to a Synthesis. . . . This gradual subordination of the triadic form to a more direct movement is a characteristic to be found throughout the Logic, and one which by no means impairs its validity. The transition must therefore be judged as a transition to a Synthesis."[2] This synthesis, McTaggart teaches, is Cognition, in its highest form — a reality, in which, actually, "the Individual and the Unity may now be said to harmonize with one another."[3] Such a reality is a self-differentiating unity in which the unity is for the individuals (that is, in which the individuals are conscious of their unity), but the individuals are not, in the same sense, for the unity (that is, the unity is not conscious of the individuals). This final stage of Cognition, as McTaggart conceives it, is, he believes, "the adequate expression of reality"[4] and identical with the Absolute Idea.[5]

But whether this conception of the Absolute be right or wrong, it seems impossible to claim it as identical with that of Hegel. McTaggart, by his own showing, has not followed Hegel to the end. He has stopped short at Cognition, wherein, certainly, consciousness is that of the many individuals and the only unity is that of which the individuals are conscious. Hegel, however, goes beyond the category of Cognition to the

[1] *Op. cit.*, §§ 16 and 17.
[2] *Mind*, Vol. IX, N. S., pp. 151–152. Cf. *Studies in Hegelian Cosmology*, § 17.
[3] *Ibid.*, p. 160.
[4] *Ibid.*, p. 157.
[5] *Ibid.*, pp. 166–170.

conception of the Absolute as conscious of its own differentiations, that is, as a person.

LOUISE WOODWARD ALLEN.

WELLESLEY COLLEGE.

We regret to announce the death of Professor Alexander Bain. Professor Bain was born in 1818. From 1860 to 1880 he was Professor of Logic and English Literature in the University of Aberdeen. He wrote many books, some of the best known of which are: *The Senses and Intellect*, *The Emotions and the Will*, *Logic*, *Inductive and Deductive*, and his volumes on James Mill and J. S. Mill.

Professor J. Mark Baldwin has been called to fill a newly established chair in Johns Hopkins University.

We give below a list of articles, etc., in the current philosophical journals:

THE PSYCHOLOGICAL REVIEW, X, 5: *G. B. Cutten*, The case of John Kinsel; *J. P. Hylan*, The Distribution of Attention (II); *Max Meyer*, Some Points of Difference concerning the Theory of Music; Discussion: An Ill-considered Color-Theory, *C. Ladd Franklin*; Psychological Literature; New Books; Notes.

THE INTERNATIONAL QUARTERLY, VIII, 1: *John M. Robertson*, Black and White in Africa; *Nathaniel S. Shaler*, The Natural History of War; *Mme. Th. Bentzon*, Marriage in France; *Brander Matthews*, Greek and Roman Comedy; *Constant Coquelin*, The "Don Juan" of Molière; *Kuno Francke*, Emerson and German Personality; *René Puaux*, Finnish Literature; *L. Joubin*, Some Monsters of the Sea; *J. G. Brooks*, A Socialistic Contention; *Isaac A. Hourwich*, Religious Sects in Russia; *Edouard Bernstein*, Social Democracy in Germany; *W. P. Trent*, A History of English Literature; *J. B. Bishop*, Lynching.

THE AMERICAN JOURNAL OF PSYCHOLOGY, XIV, 2: *B. R. Andrews*, Habit; *J. W. Baird*, The Influence of Accommodation and Convergence upon the Perception of Depth; *E. J. Swift*, Studies in the Psychology and Physiology of Learning; Correspondence; Literature.

ZEITSCHRIFT FÜR PSYCHOLOGIE UND PHYSIOLOGIE DER SINNESORGANE, XXXII, 3 u. 4: *H. Piper*, Über das Helligkeitsverhältnis monokular und binokular ausgelöster Lichtempfindungen; *Eleanor A. McC. Gamble und Mary Whiton Calkins*, Die reproduzierte Vorstellung beim Wiedererkennen und beim Vergleichen; *Paul Schultz*, Gehirn und Seele; *Alexander Bernstein*, Über eine einfache Methode zur Untersuchung der Merkfähigkeit resp. des Gedächtnisses bei Geisteskranken; Literaturbericht.

XXXII, 5: *Sigm. Exner und Jos. Pollak*, Beitrag zur Resonanztheorie der Tonempfindungen; *Alfred Guttmann*, Blickrichtung und Grössenschätzung; Literaturbericht.

XXXII, 6: *Conrad Rieger*, Über Muskelzustände; *Gisela Schäfer*, Wie verhalten sich die Helmholtzschen Grundfarben zur Weite der Pupille? Literaturbericht.

VIERTELJAHRSCHRIFT FÜR WISSENSCHAFTLICHE PHILOSOPHIE UND SOZIOLOGIE, XXVII, 2: *A. Döring*, Eudoxos v. Knidos, Speusippos und der Dialog Philebos; *Hermann Swoboda*, Verstehen und Begreifen, I; *O. Leo*, Folgerungen aus Kants Auffassung der Zeit in der Kr. d. r. V.; *Paul Barth*, Die Geschichte der Erziehung in soziologischer Beleuchtung, II; Berichtigung; Entgegnung des Rezensenten; Besprechungen.

XXVII, 3; *Hermann Swoboda*, Verstehen und Begreifen, II; *P. Scheerer*, A. Dörings rein menschliche Begründung des Sittengesetzes; *Franz Oppenheimer*, Skizze der sozial-ökonomischen Geschichtsauffassung, I; Besprechungen; Philosophische Zeitschriften; Bibliographie.

REVUE PHILOSOPHIQUE, XXVIII, 8: *G. Rageot*, Les formes simples de l'attention; *H. Piéron*, L'association médiate; *M. Mauxion*, Les éléments et l'évolution de la moralité (2e article); *Dr. Ulrich*, Phénomènes de synesthésie chez un épileptique; Analyses et comptes rendus; Revue des périodiques étrangers; Livres nouveaux; Nouvelles.

XXXIII, 9: *Vernon Lee*, Psychologie d'un écrivain sur l'art; *F.-E. Maugé*, L'idée de quantité; *Wijnaendts Francken*, Psychologie de la croyance en l'immortalité; *L. Arréat*, Observation sur une musicienne; *G. Dumas*, Les obsessions et la psychasthénie, d'après le Dr. Pierre Janet; Analyses et comptes rendus; Livres nouveaux.

REVUE NEO-SCOLASTIQUE, X, 3: *M. Defourny*, Le rôle de la sociologie dans le positivisme; *C. Domet de Vorges*, En quelle langue doit être enseignée la philosophie scolastique? *E. Janssens*, L'apologétique de M. Brunetière; *G. De Craene*, Le positivisme et le faux spiritualisme; Bulletin de l'Institut de Philosophie; Bulletins bibliographiques; Comptes-rendus.

REVUE DE MÉTAPHYSIQUE ET DE MORALE, XI, 4: *H. Poincaré*, L'espace et ses trois dimensions (suite); *G. Belot*, La véracité; *J. Évellin*, La dialectique des antinomies kantiennes; *D. Roustan*, La méthode mécanique en biologie d'apres M. Frédéric Houssay; *Th. Ruyssen*, Le monopole universitaire; Livres nouveaux; Revues et périodiques; Soutenances de thèses; Renseignements.

RIVISTA DI FILOSOFIA E SCIENZE AFFINI, I, 5–6: *C. Ranzoli*, Per la terminologia filosofica; *V. Alemanni*, Introduzione a una psicologia dei dubbio; *F. Momigliano*, Un pubblicista, economista e filosofo del periodo napoleonico (Melchiorre Gioia); *R. de la Grasserie*, De la religion abstraite et des religions athéistiques; *N. D'Alfonso*, I principii economici dell'etica; Luigi Natoli, La quistione del genio; Rassegna di filosofia scientifica.

REVISTA FILOSOFICA, VI, 3; *G. Chiappelli*, Il valore teoretico della storia della filosofia; *A. Zuacante*, La donna nella dottrina di Platone: *A. Faggi*, Filosofia, storia, arte; *O. Bottero*, 'L'Octavius' di M. Minucio Felice e sue relazioni con la coltura classica; Rassegna bibliografica; Bollettino bibliografico.

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